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ABSTRACT

This report, undertaken by the Secretary of the Department of Health, Education, and Welfare, Elliott Richardson, seeks to establish the need for emergency financial assistance to medical and dental schools, and includes recommendations for appropriate administrative and legislative action. The directive to undertake the study was a provision of the "Health Training Improvement Act of 1970," P.L. 91-519, approved on November 2, 1970. The intent of this Act was to illuminate and eventually alleviate the acute financial crises which threatened the survival of medical and dental schools. The document is organized into eight sections: Introduction; Overview of the "University Health Science Center;" Federal Programs and Problems Resulting Therefrom as Viewed from the Perspective of the Health Science Center; A Thumbnail Sketch of Schools Receiving Special Project Grant Awards Based on Financial Distress; Cost Allocation Studies, Their Background, Methodology and Interpretation; Dealing with the Cost of Medical and Dental Education in the Aggregate; The Impact of Pending Legislation; and Conclusions and Recommendations. In summary, the crux of the problem appears to be the need for "...adequate reimbursement...for each major health science center output - education, research, and patient service...," and that this "...should be the cardinal principle of public and private reimbursement policies." (LE)

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DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Financial Distress Study Report

December 1971

SE 015 155

THE SECRETARY OF HEALTH, EDUCATION, AND WELFARE
WASHINGTON, D. C. 20201

To the Congress of the United States:

In accordance with Title I, Section 102(b) of the Health Training Improvement Act of 1970 (Public Law 91-519), I am herewith respectfully transmitting a report on the need for emergency financial assistance to medical and dental schools, including recommendations for appropriate administrative and legislative action.

Extension of the Health Professions Educational Assistance program has served to surface many of the areas of controversy surrounding the financial plight of certain of the Nation's medical and dental schools. The issues at stake are both important and enormously complex.

This report hopefully represents a significant forward step in the continuing public dialogue. It contains little in the way of definitive answers, for the simple reason that a sufficient body of knowledge must be assembled before one can draw more than tentative conclusions.

The report should serve as a stimulus to the parties at interest, public and private, to undertake additional, broader, and more refined investigations directed to filling the gaps in our present understanding of that union of health professions schools and teaching hospitals known as the "health science center." Prominent among such studies will be those required by Section 205 of the Comprehensive Health Manpower Training Act of 1971.

Implementation of those recommendations requiring administrative action is already underway. I would urge the Congress to do likewise by favorably considering the proposed "National Health Insurance Partnership Act of 1971."

Sincerely,

Elliot L. Richardson

Secretary

The Speaker of the House of Representatives
The President of the Senate
The Capitol
Washington, D.C.

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Section 102(b) of the "Health Training Improvement Act of 1970" (P.L. 91-519) as approved on November 2, 1970, provides as follows:

> The Congress finds and declares that the Nation's economy, welfare, and security are adversely affected by the acute financial crisis which threatens the survival of medical and dental schools which provide the highest quality of teaching, medical and dental research, and delivery of health care for the Nation. The Secretary shall determine the need for emergency financial assistance to such medical and dental schools and shall report to the Congress on or before June 30, 1971, his determinations of such need and his recommendations for such administrative and legislative action as he determines is necessary to meet such needs.

To conduct the study called for by the Congress, a seven-member task force group was created within the Department of Health, Education, and Welfare. The membership of the group was as follows:

Robert C. Harris, Chairman
Office of the Assistant Secretary, Comptroller

*Robert M. Bucher, M.D.
Bureau of Health Manpower Education, National Institutes of Health

Joseph Preissig
Bureau of Health Manpower Education, National Institutes of Health

Richard B. Stephenson, M.D.
Office of the Director, National Institutes of Health

Marinos Svolos, LL.B.
Bureau of Health Insurance, Social Security Administration

Bernard V. Dvoskin, C.P.A.
HEW Audit Agency, Office of the Assistant Secretary, Comptroller

Donald V. Greene
Office of Grant Administration Policy, Office of the Assistant Secretary, Comptroller

*Early in July of 1971, Dr. Bucher resigned his position as Deputy Director, Bureau of Health Manpower Education to become Dean of the University of South Alabama Medical College.

The members of the task group brought to bear diverse educational backgrounds and professional experience encompassing medicine, medical school administration, grants management, law, university and general accounting, auditing, and budget and management analysis.

While the congressional mandate speaks of "medical and dental schools," a broader context was considered essential to adequately appreciate the causes, magnitude, and complexity of the problem at hand. Accordingly, the task group focused upon:

--the university health science center, not just the medical and/or dental school; and

--the role of the Department of Health, Education, and Welfare, not just the project grant or institutional support authorities of NIH's Bureau of Health Manpower Education.

During the course of its work, the group established contact with various components of the Office of the Secretary of HEW, the Social and Rehabilitation Service, the Social Security Administration, the Health Services and Mental Health Administration, the Office of Education, and the National Institutes of Health. Conversations were held with and material was furnished by representatives of the Veterans Administration and the Office of Economic Opportunity, as well as the Association of American Medical Colleges, the American Association of Dental Schools, the American Dental Association, the American Hospital Association, the Blue Cross Association, etc.

Members of the task group undertook site visits to fifteen medical schools and two dental schools. In a number of instances, medical school visits also included conversations with vice-presidents for health affairs and officials of teaching hospitals.

Periodically, advice and assistance was sought from four non-governmental advisors representing different aspects of health science center, medical school, and dental school administration.

Despite its comparative bulk, the material which follows is actually in the nature of a "status report." Repeatedly, analyses undertaken in response to the congressional mandate served to identify the need for further, broader, and more sophisticated studies utilizing, wherever possible, for example, the techniques of economic analysis. The Department of Health, Education, and Welfare has every intention of building upon the present report in the weeks and months ahead.

Not surprisingly, the scarcity of data adequate for analysis has been a major inhibiting factor in the work completed thus far. To cite just one illustration, trend data on institutional expenditures and sources of income cannot be displayed with any degree of confidence. The available statistics have been compiled from source documents which suffer from differing interpretations of the proper allocation of funds.

Surely this is not a unique observation. As others have noted:

> We believe that it is imperative that medical educators and others with responsibilities in medical education recognize the shortcomings of existing data sources and implement better and more thorough data-generating systems. 1/

And:

> After 130 years of existence, we in dental education have yet to develop a reliable method of determining, with acceptable accuracy, the financial condition of our dental schools. One does not have to dig very deeply at any level--local, state or national--before realizing, or being told, that the kinds of information needed for a meaningful analysis of the financial problems of dental schools just do not exist in useable forms for purposes of comparison or for identification of trends. 2/

A logical next step, therefore, is setting in motion a series of activities--government-sponsored and privately-supported, focusing on institutions in the aggregate and in small groups or individual schools--which will ultimately provide the improved data base required.

Even with its acknowledged shortcomings, the analyses and discussion to be presented on the succeeding pages are a major step forward and serve to highlight and clarify questions requiring further study, provide an impetus to such study, and act as a framework for a broad-based dialogue on the complex issues at stake.

Three of the findings are particularly worth keeping in mind as the reader proceeds through the report:

--the financial difficulties of health science centers appear to be concentrated in the so-called "educational environment" rather than in instructional activities per se, and especially instruction of undergraduate medical students;

--a variety of factors from the patient service and research arenas will generate further pressure to associate deficits in the broad "educational environment" with the cost of undergraduate medical (and dental) education; and

--probably the single most important factor in achieving long-run financial stability for health science center operations will be the development of adequate sources and mechanisms of reimbursement for patient service activities.

If, in fact, reimbursement for each health science center program--education, research, and patient service--is to be recognized as adequate by both the "buyer" and the "seller", two necessary precursors are (a) the development and introduction of fully acceptable cost accounting systems in the broadest sense of the term, and (b) recognition that channeling significant Federal support for education through ostensibly "research" and "service" programs is simply not sound policy in the long run.

Footnotes

1/ Rashi Fein and Gerald I. Weber, Financing Medical Education: An Analysis of Alternative Policies and Mechanisms, A General Report for The Carnegie Commission on Higher Education and The Commonwealth Fund (New York: McGraw-Hill Book Company, 1971), p. x.

2/ Dean Louis G. Terkla, University of Oregon Dental School, "Financial Problems of State and Privately Supported Dental Schools," Paper read at the Deans' Conference, Palm Springs, Calif., November 29-December 2, 1970, p. 1.

The University Health Science Center

A representative pre-World War II medical school largely confined to the task of educating medical students has been described as follows:

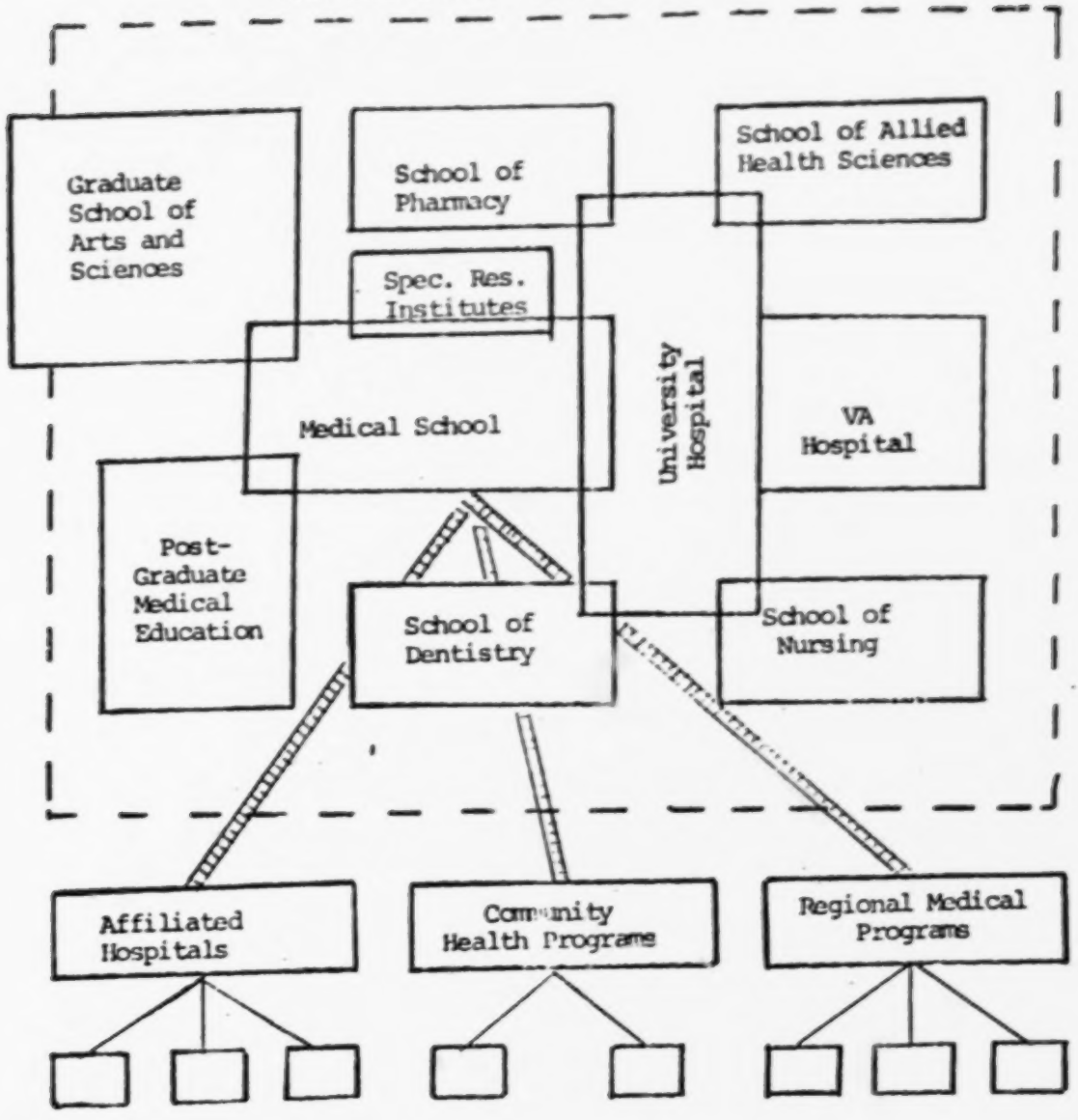
> A building, or a group of buildings housing small basic science departments and a library. While it might have had its own hospital, more often most of its clinical teaching was conducted in affiliated hospitals for which it had little financial or administrative responsibility. Most of the clinical teachers were volunteers and required little in the way of office or laboratory space in the school. 1/

Over the last twenty-five years, a new institution has emerged which may be referred to, in the words of the Carnegie Commission, as the "university health science center. 2/

Figure 1 illustrates the major elements of the modern health science center as well as its multiple interrelationships. This is not to say that all of the medical and dental schools in this country function as part of either a university, or a science center, with so many or so varied an array of constituent units. This illustration is a fair although in some respects simplified representation of actual university health science centers now in existence.

PROGRAM SCOPE AND RELATIONSHIPS OF THE UNIVERSITY HEALTH CENTER

FIGURE 1



AAMC/DPPD
3/2/71

The multiple organizational units may or may not all be situated on a common physical site. Whether they are parts of a single corporate entity will also vary. The teaching hospital is a case in point. Physically, the hospitals utilized by medical schools as major teaching units can be located in different parts of the same city or in more than one city. They may be separate corporations who affiliate by agreement with a school or they can be owned outright by the medical school or parent university.

The health science center may be viewed as a group of related and interdependent institutions. Stemming from the modern conception of what constitutes acceptable medical and dental education, the interdependence is both programmatic and fiscal in nature.

What binds the components into a management unit?

--The faculty, and particularly the clinical faculty, with joint medical school-teaching hospital appointments and involvement in education, research, and patient service activities.

--Administrative direction and coordination provided by a "vice-president for health affairs" or similar official at the helm of the health science center.

Are the multiple activities necessary? As recently stated by Fein and Weber:

> Teaching must be accompanied by some (but it is not clear how much) research and some delivery of service. There is evidence that the quality of service is positively correlated with the presence of research and teaching. Research may be improved if assisted in by students and, perhaps, if associated with the delivery of service. The medical school's products are therefore multiple and intertwined; it must produce all if it is to produce one. 3/ (Emphasis supplied.)

The critical issue is not whether there should be an "educational environment," but rather how extensive an "environment" is necessary for accomplishment of the educational missions.

The three interrelated activities of education, research, and patient service as well as some quantification of the broad array of educational programs conducted are shown in Figure 2. Educational responsibilities do not reflect faculty efforts related to the instruction of pharmacy, veterinary medicine, nursing, and, with the exception of dentistry, other health and allied health professions students. These responsibilities have yet to be quantified on a uniform basis.

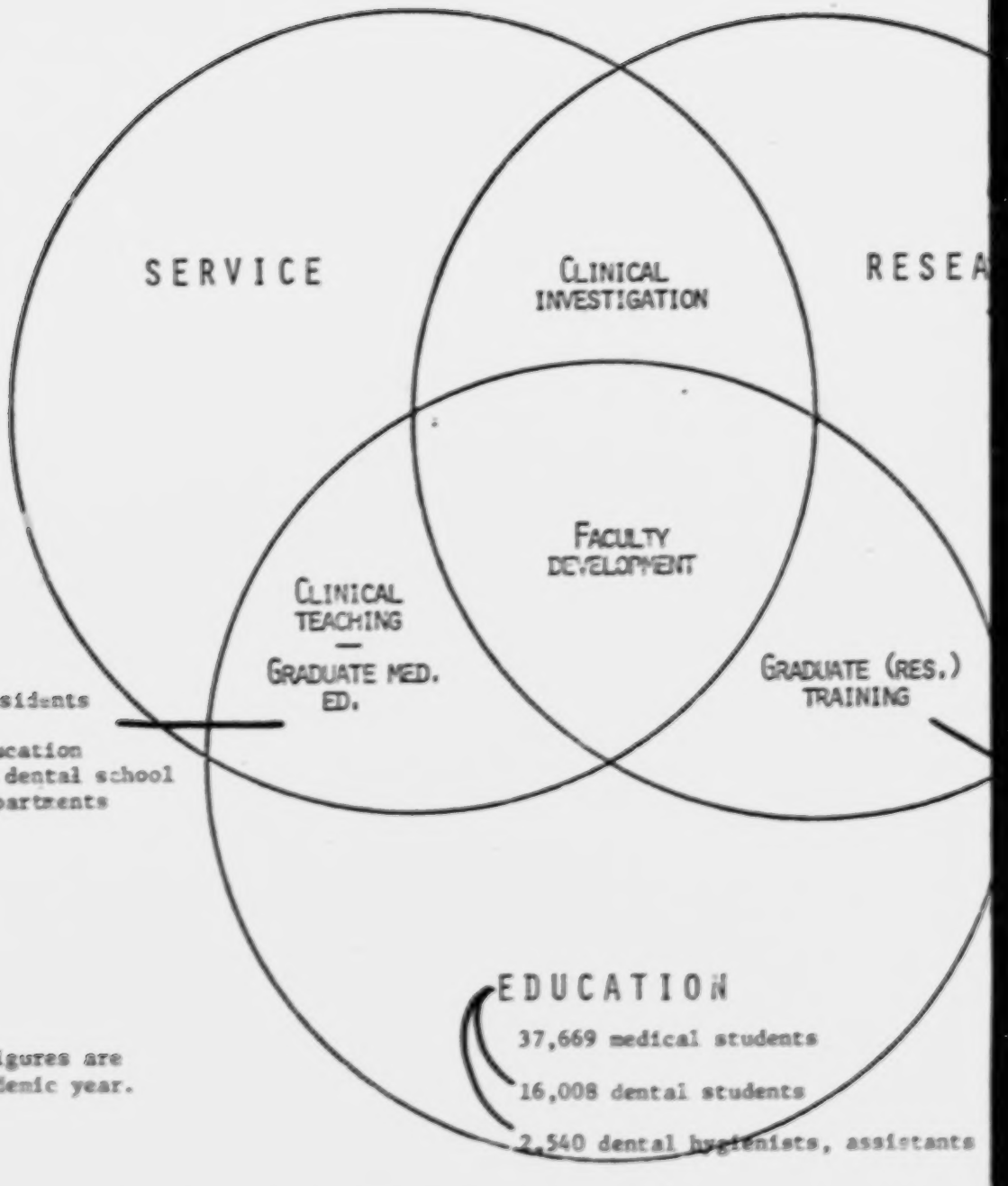
The extent of overlap varies according to the particular output of the health science center under consideration. For example, the education of new basic science and clinical faculty for replacement purposes and to staff new and expanding medical and dental schools involves all three aspects of the triad--education, research, and patient service.

The interdependency of health science center components is reflected in varying ways.

--in addition to rendering a significant portion of the professional services required by patients, senior medical residents generally function as teachers to less experienced interns and residents, medical students, and other health professions students.

--graduate students in the basic medical sciences frequently assist faculty members in their research projects as well as share a portion of the teaching load.

--basic sciences courses presented in the freshman and sophomore years of dental school may be conducted by dental school faculty, medical school faculty, or by a separate basic science faculty reporting to the respective deans of the medical and dental schools.

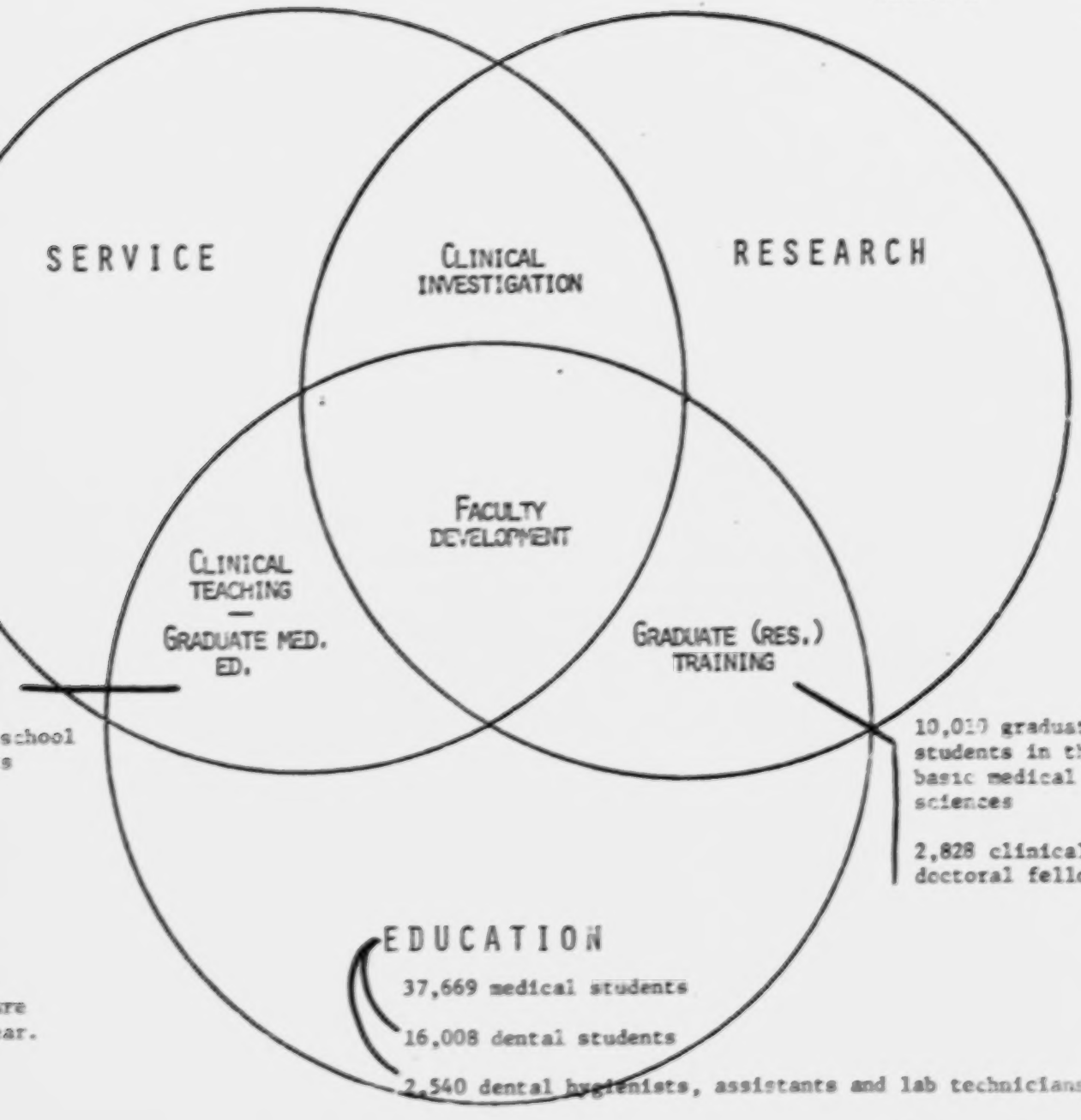


6,664 interns & residents

1,851 advanced education students in dental school clinical departments

NOTE: Enrollment figures are for the 1969-70 academic year.

FIGURE 2


SERVICE
CLINICAL INVESTIGATION
RESEARCH
FACULTY DEVELOPMENT
CLINICAL TEACHING
GRADUATE MED. ED.
GRADUATE (RES.) TRAINING
EDUCATION
10,010 graduate students in the basic medical sciences
2,828 clinical post-doctoral fellows
37,669 medical students
16,008 dental students
2,540 dental hygienists, assistants and lab technicians

The financial operations of university health science centers are another manifestation of the complexity which characterizes this management entity. Among the factors affecting budgetary size are:

--the extent of responsibility for teaching medical and dental students, house staff (i.e., interns and residents), and other students;

--the degree of commitment to biomedical research;

--the number of full-time faculty;

--legal relationship to the teaching hospital(s); and

--the patient care and other community obligations which the center has assumed.

Especially noteworthy from a financial standpoint are the heterogeneous and frequently intricate arrangements for payment of clinical faculty salaries and stipends to house staff, arrangements which are dependent upon medical school-teaching hospital relationships and the structure of faculty practice plans.

Hardy and Knapp, in their recent survey of 86 medical school practice plans, found only two instances of a full-time salaried faculty with no involvement in fee-for-service practice. In nine other institutions, fee-for-service activity exists, but is handled directly between the faculty member and the patient without medical school involvement. Table 1 categorizes the remaining 75 institutions, as well as indicating within each of the two broad groupings, the disposition of fee-for-service income generated from both private patients and so-called "staff" or "service" patients. 4/

At least in part as a result of its multiple outputs, the health science center is supported by a variety of funding sources, both public and private. Within the Federal Government, the funds come from a multitude of programs, each with its own statutory mission, and converge at the level of or within the health science center itself.

Survey of Medical School Faculty Group Practice Plans

	Some involvement of the school with professional fees. Collections by individual physicians' offices, group billing in a particular department, or centralized billing.	School-wide practice pla organized. billing, fre separate bus handle patie business mat
Number of respondents	45	
Disposition of income generated		
A. Faculty private practice		
1) To individual clinician up to a previously agreed on dollar ceiling. Balance reverts to school and/or the clinician's particular department.	19	
2) To individual	8	
3) To school, primarily for clinical faculty salaries	--	
4) Other (e.g., to department, department and school, etc.)	18	
B. Third-party payments on staff or service patients		
1) To individual	6	
2) To school	8	
3) To department	8	
4) To department and school	3	
5) To teaching hospital	3	
6) Other (e.g., to a foundation, hospital and school, a practice group, etc.)	17	

TABLE 1

Survey of Medical School Faculty Group Practice Plans

	Some involvement of the school with professional fees. Collections by individual physicians' offices, group billing in a particular department, or centralized billing.	School-wide faculty group practice plan formally organized. Centralized billing, frequently with a separate business office to handle patient-related business matters for the staff.
	45	30
e generated practice		
clinician up to a previously lar ceiling. Balance reverts d/or the clinician's particular	19	12
l	8	3
rimarily for clinical faculty	--	10
to department, department etc.)	18	5
ents on staff or service patients l	6	1
	8	6
t	8	4
t and school hospital	3	7
	3	1
to a foundation, hospital and actice group, etc.)	17	11

FEDERAL DOLLAR FLOW IN THE
UNIVERSITY HEALTH CENTER

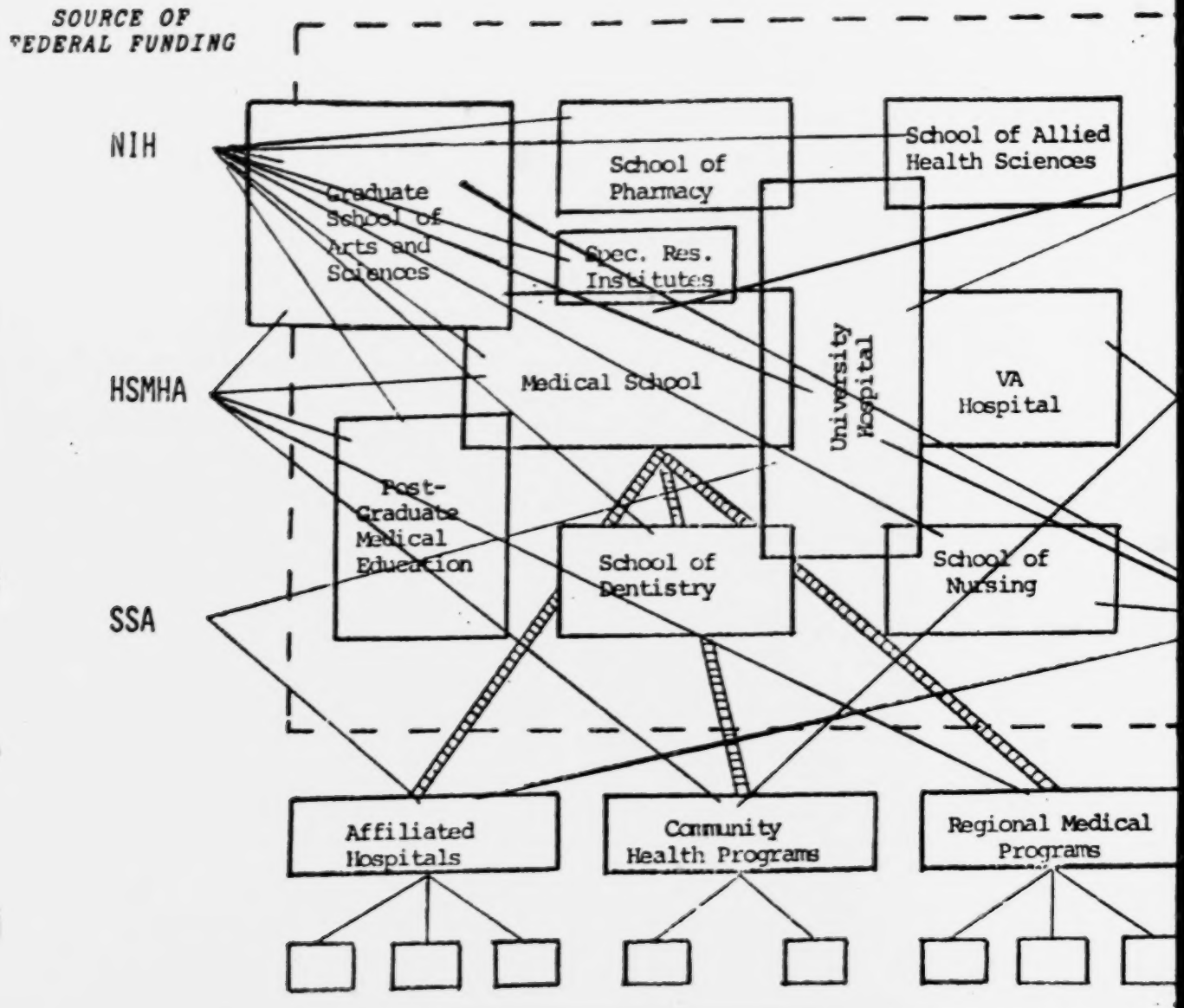


FIGURE 3

FEDERAL DOLLAR FLOW IN THE
UNIVERSITY HEALTH CENTER

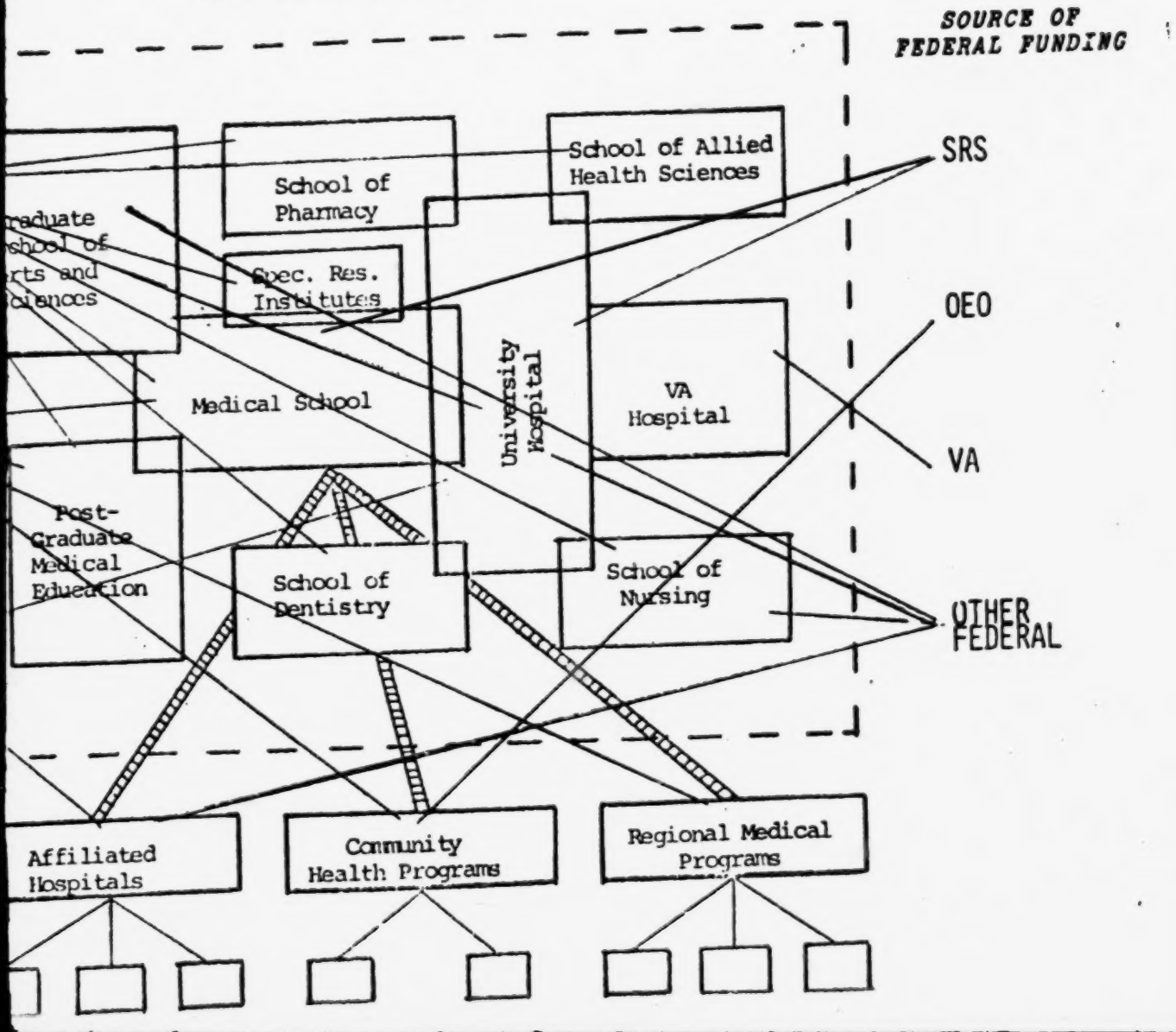


Table 2

Fiscal Year 1970 Obligations of Department of Health, Education, and Welfare Programs to "University Health Science Center" Components

(In thousands)

Recipient	Purpose		Total Obligations
	Support for research activities	Support for other activities	
Medical schools	$515,249	$269,503	$784,752
Dental schools	15,048	58,959	74,007
Other health & allied health professions schools	41,183	45,918	87,101
Major teaching hospitals	71,705	21,026	92,731
Grand total	$643,185	$395,406	$1,038,591

--No data are available which accurately reflect the flow of Medicare and Medicaid funds to health science center components

--"Research activities" encompass research project and research resource grants, research training and fellowships, general research support, etc.

--NIH programs represent almost $800 million of the $1 billion total

--Research project grants, at $374 million, are the largest single funding category

--Grants for the construction of teaching facilities and institutional support account for the greatest share of so-called "other activities"

Federal Programs Impacting Upon Health Science Centers

A. Biomedical research

--oldest and largest form of grant funds available to health science centers

--provides substantial support for faculty and other salaries, equipment, and central resources such as animal facilities

--tabulations of Government-wide research awards encompass only medical schools

--in fiscal 1969, NIH accounted for 79% of total Federal support for the conduct of research at medical schools

--Health Services and Mental Health Administration (HSMHA), HEW represents a significant portion of the remainder, with lesser contributions from the Atomic Energy Commission, Department of Defense, National Science Foundation, etc.

B. Manpower training

--in fiscal 1970, health manpower training was supported through 144 separately identifiable Federal programs with aggregate funding in excess of $1.1 billion

--health manpower training activities were conducted as part of a broader agency mission in some instances Level of training covered the gamut from general education of the public to postdoctoral specialty training

--while certainly not all or perhaps even a sizable number of these 144 programs would be underway in a typical health science center, there could be varying degrees of participation in a broad spectrum of Federally supported activities from, for example, recruitment and remedial education to interest the disadvantaged in health careers to postdoctoral clinical fellowships

--ninety-seven of the 144 programs were administered by HEW operating agencies 5/

--the Veterans Administration is also very active in the training field with:

1) close associations between VA hospitals and 82 medical, 52 dental, and 287 nursing schools

2) faculty appointments for VA professional staff

3) VA facilities providing some portion of the required clinical experience for 50% of all medical school graduates. Residents in VA hospitals occupy about 12% of all filled medical residencies on any given day

C. Patient service

--Medicare and Medicaid are easily the most significant of the service-oriented programs

--under the hospital insurance program (Part A of Medicare), hospitals, extended care facilities, and home health agencies are reimbursed for the cost of services furnished to Medicare patients. Reimbursement includes a proportionate share of the costs incurred in paying interns, residents, and teaching physicians as well as other costs attributable to graduate medical education, nursing, and allied health training

--the medical insurance program (Part B of Medicare) provides fee-for-service reimbursement for services received from physicians, independent laboratories, and certain other suppliers

--Senate Finance Committee staff have estimated that Part B payments where the attending physician supervises interns and residents may amount to $100 million or more annually 6/

--Medicaid is a joint Federal-State program which seeks to provide certain categories of the poor and medically needy with health care

--HSMHA is responsible for a broad range of community service programs, including mental health centers, health care projects for mothers and children, regional medical programs, etc.

--also pertinent are the Office of Economic Opportunity sponsored neighborhood health centers

To summarize:

a) The Government contributes heavily to the complexity and diversity of health science center operations

b) Multiple programs and funding arrangements have developed over the years

c) HEW administers a very substantial percentage of the programs and dollars involved

d) Not surprisingly, many problems have been created from the perspective of the health science centers, a matter to be treated at greater length for selected Federal programs in the next section of the report

Footnotes

1/ American Medical Association, Money and Medical Schools, A Report Prepared by the Council on Medical Education and Hospitals (Chicago: American Medical Association, [1963], p. 26.

2/ Carnegie Commission on Higher Education, Higher Education and the Nation's Health: Policies for Medical and Dental Education (New York: McGraw-Hill Book Co., 1970), p. 46.

3/ Fein and Weber, 5.

4/ Clyde T. Hardy, Jr., Associate Dean/Private Patient Services, Bowman Gray School of Medicine of Wake Forest University, "Report of the Survey on Faculty Group Practice Plans," Winston-Salem, N.C., May 6, 1971, pp. 1-5.

5/ U.S., Department of Health, Education, and Welfare, Bureau of Health Manpower Education, Inventory of Federal Programs that Support Health Manpower Training 1970, Part II, An Appendix to Federal Health Manpower Programs 1970, pp. iii-1.

6/ U.S., Congress, Senate, Committee on Finance, Report of the Staff, Medicare and Medicaid: Problems, Issues, and Alternatives, 91st Cong., 1st Sess., 1970, p. 71.

Biomedical Research

A. How has research funding worked to the advantage of the medical education process?

--increased the ratio of faculty to students by spreading the teaching load over a larger number and greater variety of faculty talents

--permitted introduction of project-type laboratory work in the basic medical sciences

--increased the number of opportunities and the diversity of problems for student research

--provided special and diverse equipment, laboratories, and problems for student laboratory or demonstration work

--provided a greater diversity of elective or required courses for both undergraduate and graduate students (e.g., genetics, biophysics, molecular biology, etc.)

B. What has been the trend in medical school enrollment and student-faculty ratios? 1/ 2/

			Student-Faculty Ratios		
	Medical Students	Full-time Faculty	Overall	Basic Sciences	Clinical Sciences
1960-61	30,288	11,111	2.7	3.9	2.0
1964-65	32,428	15,514	2.1	3.3	1.5
1968-69	35,833	23,014	1.6	2.7	1.0
1969-70	37,669	24,706	1.5	Not available	Not available

To an increasing extent, medical students have accounted for a minority portion of the teaching responsibilities of full-time faculty. During the period from academic year 1962-63 to 1969-70, the number of house staff and master's, doctoral, and postdoctoral candidates in the basic and clinical sciences rose from 26,427 to 40,865. Sixty-two percent of the 14,438 increase is in the house staff (i.e., intern and resident) category. The absence of a uniform system for computing

full-time equivalents militates against the inclusion of numbers of pharmacy, nursing, and other health and allied health professions students, but medical school faculty responsibilities in this area must also be recognized in any evaluation of total student-faculty ratios (Figure 2).

According to the Education Number of the AMA Journal, about 60% of the teaching time and energy of medical school faculty is expended with students other than medical students. 3/ In addition, although admittedly based on a small sample, a 1968 survey of 344 full-time medical school faculty members found that twelve percent taught no courses. 4/

Federal research support alone has not produced the dramatic decline in medical student-faculty ratios over the past decade. There have been other contributing factors such as the start of a sizable number of new medical schools and the initiation of formula grant institutional assistance from the Federal Government, with the funds specifically intended for educational programs and utilized primarily for faculty salary support.

C. Why has there been such a movement toward greater numbers of full-time faculty and graduate students?

"Changes in clinical teaching and augmented research have been important factors in . . . increases in full-time faculty.

* * * * *

Research, and the supervision of research training . . ., have become demanding jobs not readily compatible with part-time commitments to the school, . . .

* * * * *

Even if a school wanted to eliminate or limit drastically the number of graduate students, residents, and fellows that it would train, it would find it very difficult to do so. These students make indispensable contributions to many phases of the educational, research, and service programs. Most important, a school can attract and retain competent faculty only when it provides an environment which encourages the individual teacher to provide advanced training in his own special field. Graduate programs are to the basic science faculty what residency programs are to the clinical faculty." 5/ (Emphasis supplied.)

"If research dollars are available and educational dollars are lacking, medical schools will expand their research faculties. If they are able to obtain one full-time teacher by funding (with Federal

assistance) five research persons, each of whom spends 20 percent of his time teaching, they will do so.

* * * * *

So it is that the direction of the schools, the growth of faculty, and the costs associated with that growth can and will be influenced by the level and kind of financial aid available to the schools themselves." 6/

D. What adverse effects have these developments created?

Science magazine discussing Stanford University School of Medicine concluded that "the effect of federal support so far has been to create departmental fiefdoms, to relegate the dean to the role of mediator and power broker, and to put the premium and priority almost uncritically on growth." 7/

Fein and Weber cite:

--an excessive allocation of medical school resources to the research function with a consequent adverse effect on the attitude of medical students toward the provision of services;

--continuing controversy over the extent to which schools have to bear some portion of the costs of sponsored research;

--distribution of research monies on a school-by-school basis in such a way "that extreme differences apparently exist in the resources available for educational purposes," since research funds complement and benefit education programs; and

--subjection of educational funding to Federal budgetary decisions aimed at the research effort. 8/

The Dean of Harvard Medical School, among many others, has emphasized that "the pattern of funding and the philosophy of support by the NIH tended to fragment planning and to diminish the sense of responsibility of individual faculty members for the general welfare of the school." 9/

By way of contrast, at the 1961 Teaching Institute of the Association of American Medical Colleges there was recognition "that many difficulties commonly identified as faults of the system of financing research are in fact reflections of deficiencies in the way in which schools govern themselves." And, of perhaps greater import, "if outside support of research, or other functions of

medical schools, results in loss of freedom, the prime cause is more likely to arise from within--in the form of inability to set and administer policy--than from without." [107]

E. Does the trend in funding levels for NIH biomedical research give credence to the contention that this is a cause of present financial difficulties?

The following table is a display of year-to-year changes in funding level for the NIH research institutes and divisions in the aggregate. "Funding level" is defined herein as obligations or amounts available for obligation in each applicable fiscal year.

(Dollars in millions)

Fiscal Year	Total Budget		Extramural Research		Research Training	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
1962	$566	--	$364	--	$100	--
1963	86	15.2%	50	13.7%	16	16.0%
1964	108	16.6	60	14.5	17	14.7
1965	76	10.0	45	9.5	13	9.8
1966	93	11.1	60	11.6	23	15.8
1967	105	11.3	105	18.1	14	8.3
1968	51	4.9	35	5.1	4	2.2
1969	(11)	(1.0)	(11)	(1.5)	10	5.3
1970	(36)	(3.4)	(20)	(2.8)	(18)	(9.1)
1971	154	14.8	121	17.6	3	1.7
1972	123	10.3	96	11.9	(5)	(2.8)
1972	1,315	--	905	--	177	--

--in fiscal 1962, the total budget for the NIH research institutes and divisions was $566 million, of which $364 million was for extramural research and $100 million was for research training grants and fellowships.

--from fiscal 1962 to 1963, the total budget for the institutes and divisions increased by $86 million or 15.2 percent. Within this overall figure, the extramural research programs grew by $50 million or 13.7 percent and research training and fellowships rose by $16 million or 16.0 percent over the preceding fiscal year.

--from 1968 to 1969 and again from 1969 to 1970, the total budget and that portion constituting extramural research programs declined, both in absolute amounts and in percentage terms. Research training grants and fellowships also showed a reduction in amounts obligated of $18 million or 9.1 percent from fiscal 1969 to 1970.

--the adjusted President's Budget for fiscal 1972 requests $1,315 million for the NIH research institutes and divisions, an increase of $123 million or 10.3 percent over the preceding fiscal year. Of this amount, extramural research programs represent $905 million and research training and fellowships account for $177 million.

--included in both the total budget and research training figures for 1972 is $23 million for the institutional support segment of research training programs. This amount is reflected for purposes of comparability, although in the President's Budget document it is actually proposed as part of the appropriation request for NIH's Bureau of Health Manpower Education rather than the categorical institutes.

--within the extramural research category, regular research project grant funds have increased from $266 million in fiscal 1962 to a proposed level of $503 million in the 1972 President's Budget. Research contracts have shown the largest percentage growth, rising from a $31 million support level in 1962 to a projected $192 million in 1972. A very significant increase occurs in the contract support category from 1971 to 1972 because of the Presidential initiative in cancer research.

Veterans Administration

--since World War II, the leadership of the VA has encouraged affiliation of VA clinical facilities with medical and other health professions schools. This policy has been characterized as "the single most responsible factor for having sustained a reasonable quality of professional care in VA hospitals to date." 11/

--"to the medical schools, the basic gain accruing from the affiliation has been the multiplication of beds available to them for clinical teaching." 12/ In addition, VA professional staff receive faculty appointments and participate actively in the school's teaching programs.

--early in 1969, certain irregularities came to the attention of VA Central Office staff regarding violation of VA regulations barring a full-time physician from assuming continuing responsibility for care of non-veterans and abuse of policies concerning teaching by VA employees during official working hours.

--subsequent investigation uncovered sufficient problems at medical school-affiliated VA hospitals to result in issuance of revised guidelines governing the activities of professional and administrative personnel.

--the new guidelines, released in final form in mid-1970, established for the first time a regular tour of duty of a minimum of 80 hours per pay period (i.e., two weeks) for all full-time VA physicians, dentists, and nurses. Teaching for remuneration "must occur outside the individual's VA tour of duty." Nonremunerative teaching can be part of the tour of duty and may take place within or outside the VA hospital. "Station management, however, is expected to exercise prudent control over these activities to insure that the time devoted...is not excessive to the degree that it would detract from the accomplishment of the VA's primary mission, patient care." 13/

--Reportedly there has been some dissatisfaction on the part of VA staff physicians and, possibly, difficulties created for medical schools heavily dependent on the teaching contributions of full-time VA personnel.

--another unceasing harrassment to the affiliations, from the standpoint of the schools, has been what they consider inadequate funding of VA medical care programs and, more particularly, inadequate staffing levels in the VA hospitals.

Medicare

--in calendar 1969, hospital care represented $23.9 billion of the total national health expenditures of $63.8 billion. Health insurance for the aged (Medicare) amounted to $4.4 billion or 18.4% of hospital care expenditures. Federal, State and local vendor medical payments under public assistance (Medicaid) were $1.8 billion, or 7.4% of expenditures for hospital care. 14/

--only fragmentary information is available concerning the magnitude of Medicare reimbursement for educational costs.

A. What have been the beneficial aspects of Medicare?

--teaching hospitals, many of which had developed on the concept of care for the indigent, gained a new source of revenue for the cost of care of patients age 65 and older

--a long-recommended process of cost finding was introduced for better hospital management control

--depending on the circumstances of the situation, a new source of fee income was created for clinical faculty members, both full-time and voluntary. This has hopefully served to enhance the teaching program as well as patient care.

B. What is the basis for determining Medicare reimbursement?

--hospitals and other institutional providers are reimbursed on the basis of reasonable cost, with a proportionate share of house staff, nursing, and allied health educational program expenses recognized as an allowable cost

--physicians' services are reimbursed under Part B on the basis of reasonable charges, taking into account both the physician's customary charge and the charge prevailing in the locality for similar services

--teaching, supervisory, and administrative services which a hospital's medical staff furnish in connection with a teaching program are covered as a hospital service (Part A of Medicare) and reimbursed on a cost basis. In addition, under certain circumstances the teaching physician is eligible to be reimbursed on a charge basis (Part B of Medicare), i.e., if he acts as a patient's "attending physician" as that term is described in regulations.

C. What is the background of the dual reimbursement policy (i.e., reimbursement for teaching physician services under both Parts A and B)?

--prior to the enactment of Medicare, some hospitals routinely charged patients who did not have a private physician for the professional services of house staff. These charges were generally well below prevailing charges for the area and collection could be partially or entirely foregone if the patient were indigent.

--the Medicare legislation is specific in requiring that reimbursement for services rendered by interns and residents can only be reimbursed on a cost basis. This has been characterized as reflecting "both private insurance practices and the traditions and realities of medical education ...." 15/

--how Medicare should reimburse for the services of a physician who supervises house staff was not specifically detailed in the law, beyond the general requirement that his institutional services be reimbursed on a cost basis and his professional services to patients be reimbursed on a charge basis. Accordingly, early in 1966 the Social Security Administration convened a work group composed of representatives of medical education and various physician organizations to help define criteria applicable in a teaching setting.

--in the discussions of the work group, it was emphasized many times that payment on a fee-for-service (charge) basis would not only provide compensation for the valuable medical care furnished by attending physicians, but that it would provide needed financial support for medical education and, hence, benefit patients generally. It was also recognized that the elderly could not attain the same status as other insured patients if they were not provided the means of paying their own way.

--with the aged now in a position to pay for the services of a private physician, there was apprehension among the work group members that involvement of the elderly in physician training programs would be reduced unless financial support could be found for upgrading the services offered by teaching hospitals with an almost exclusively charity clientele and which had not previously offered the choice of a private physician. The necessary upgrading was thought to encompass (1) improvements required to make teaching programs more attractive to patients, and (2) more equitable compensation of interns and residents.

--the regulations that were adopted stem from discussions of the work group and the Health Insurance Benefits Advisory Council (HIBAC), and require that the teaching physician "provide personal and identifiable direction to interns or residents who are participating in the care of his patient" for Medicare to recognize a fee for his services. Regulations also specify certain activities which must be carried out by the physician in order to qualify for this form of reimbursement.

D. What has been the reaction to the policy established for reimbursement of teaching physician services?

--SSA has not formally studied the impact of its policies in this area on Blue Shield and commercial insurance carriers under their own policies. However, at least two carriers began paying for supervisory physician services under their own programs after the enactment of Medicare, one employing a fee schedule and the other "reasonable and customary charges."

--Senate Finance Committee staff have been critical, questioning particularly the legal justification for fee payments for services to non-private patients. Concern was focused on payment of "customary and prevailing charges" in those teaching settings where, as indicated earlier, the practice prior to Medicare was either not to charge a professional service fee or set the fee at a low level in recognition of the indigency of the patients being served. Termination of such payment was recommended in a February 1970 staff report. 16/

--it also became clear as a result of General Accounting Office and HEW audits that the attending physician regulations were not being consistently observed, and that claims for reasonable charge reimbursement were not supported by appropriate documentation. In mid-1969, SSA instructed Medicare carriers to temporarily suspend Part B payments for hospitals with large teaching programs. Subsequently, a number of cases were identified in which substantial amounts had been improperly billed and paid, and SSA distributed more explicit guidelines outlining the conditions under which Part B reimbursement is appropriate.

--while Part B payments to teaching hospitals have generally been resumed (even though an overpayment may be outstanding), the entire episode could not help but have an adverse effect on the relationship of SSA and the Medicare carriers with university health science centers.

E. From the standpoint of the health science centers, what aspects of Medicare have been troublesome?

--the Organization of University Health Center Administrators believes that "the team approach to patient care which is now practiced in medical centers and which holds great promise for the future is simply not adequately recognized in the Medicare guidelines." 17/

--since Part A reimbursement is keyed to costs incurred by the teaching hospital, there is no provision under present law for reimbursement for the administrative, supervisory, and teaching activities of physicians compensated by an affiliated medical school or medical group.

--Medicare does not recognize the costs of all charity patients being served (i.e., bad debts attributable to non-Medicare patients) as a reimbursable cost. Only bad debts attributable to Medicare deductibles and co-insurance are reimbursable. From the standpoint of the providers, the impact of this Medicare provision has been compounded by implementation of a uniform cost finding system which has also been adopted in large measure by Blue Cross and other third-party carriers in administration of their own programs. In total, a heavy blow has been dealt to the "Robin Hood" concept of patient charges where those able to pay in effect subsidize hospital care for the medically indigent.

F. What is the SSA response to the matter of losses incurred in serving the indigent?

--Congress clearly intended that Medicare "would pay the reasonable costs of care for the elderly but would not underwrite the care of other segments of the population."

--"It is . . . not realistic to look to medicare as the answer to the financial needs of teaching hospitals over and above payment for services rendered" to Medicare beneficiaries. 18/

--HIBAC has formally requested the Secretary of Health, Education, and Welfare to undertake a study aimed at determining how medical education should be financed, including the proper role of health care financing and research programs which make available Federal funds to support medical education activities.

--SSA now has in progress a study of the impact of Medicare on the financial structure of hospitals.

What factors cause patient care costs in a major teaching hospital to be greater than those incurred in community hospitals of comparable size?

While a number of available commentaries refer to the higher costs of teaching hospitals, there is considerable need for further analysis in this very complex area. The following citations are indicative of the data available, and are presented without necessarily implying endorsement of the rationale advanced by each source.

Preliminary findings of a special study conducted by a university teaching hospital in conjunction with three community hospitals identified several hypotheses to explain differentials in patient care costs:

--a significantly higher medically indigent patient load at the university hospital than at comparable non-teaching hospitals

--substantially larger and more diverse outpatient clinics at the university hospital

--a significantly lower occupancy rate in the teaching setting

--greater utilization of diagnostic services than in non-teaching hospitals

--a significantly higher nurse staffing expense at the university hospital

--existence of many specialized referral services which are not found in community hospitals

--the university center has a greater capital investment in clinical facilities than does a non-teaching hospital

A study by the Commission on Professional and Hospital Activities based on 1966 data produced the following findings: [19]

	Major Teaching Hospitals	Other Teaching Hospitals	Non-teaching Hospitals
Average stay	8.7 days	7.5 days	6.8 days
Adjustments to equate to the average stay of a major teaching hospital:			
a) Patient mix (i.e., more complicated cases)	--	+0.4 days	+0.7 days
b) "Teaching effect" slowing delivery of care	--	+0.8 days	+1.2 days

Blue Cross of Greater Philadelphia has suggested a cumulative impact from:

--a great expansion in the number of residents through a lengthening of many residencies and a broadening of the medical sub-specialties now having approved programs

--a change in the concept of reimbursing residents from a small stipend to a substantial salary plus fringe benefits

--establishment of positions for salaried physician directors of medical education necessitated by the number of interns and residents

--a considerably longer average length of stay in teaching hospitals than in non-teaching hospitals

--conduct of additional procedures, treatments, and tests which increase both the volume and cost of such hospital departments as x-ray, laboratory, and pharmacy. [20]

Medicaid

--Medicaid programs are operative in every State except Alaska and Arizona. Twenty-eight programs cover both people who are eligible for public assistance (i.e., cash assistance recipients) and some other low-income people (i.e., the medically indigent). Twenty-four Medicaid programs cover only people eligible for public assistance.

--certain minimum services, including inpatient and outpatient hospital care and physicians' services, are required and States have the option of providing additional services.

--Medicaid reimbursement policy for inpatient care at all types of hospitals has followed the Medicare guidelines (i.e., reasonable cost). Other medical service providers are reimbursed according to State policies, although the Federal regulations encourage payment of reasonable fees to individual physicians and other suppliers.

--in 1969, the American Hospital Association polled State hospital association executives concerning the operation of the Medicaid program. Out of 36 States where the program had been in effect for at least one fiscal year, physician fees were reimbursed on the basis of usual and customary charges in 20 instances. Seven States utilized, at that time, a fixed fee schedule for physician reimbursement. 21/

--while no precise information is at hand, it is currently the opinion of HEW's Social and Rehabilitation Service that a large majority of the States are using fixed fee schedules for physician services, including services rendered in a hospital outpatient department. Taking one teaching hospital in a large Northeastern State as an example, the established fee for an outpatient visit ($4) is only a fraction of the cost ($17) reportedly incurred in rendering the service.

--beyond what is characterized as "inadequate reimbursement," difficulties are created as a result of State-by-State variations in Medicaid eligibility standards. A health science center, for example, can be incurring substantial deficits in the outpatient department and emergency service of the teaching hospital(s) as a result of serving large numbers of individuals who are medically indigent, but who lack Blue Cross or commercial health insurance coverage and are not eligible for benefits under the State Medicaid program.

Preliminary analysis suggests a positive correlation between a comparatively low State Medicaid eligibility standard, for both cash assistance recipients and the medically indigent, and the existence of a medical school in financial difficulty within the same State. "Financial difficulty" as used in this instance refers to successful competition for NIH special project grant support based on relative financial need or financial distress. A more sophisticated analytic approach, recognizing such factors as relative State fiscal effort in support of higher education, is required before any firm conclusions can be drawn along these lines.

Footnotes

1/ Kenneth M. Endicott, "Health Manpower and Research Support," Journal of Medical Education, 45 (September 1970), 682.

2/ American Medical Association, Medical Education in the United States 1968-1969, Reprinted from the Education Number of the Journal of the American Medical Association, 210 (November 24, 1969), 1477.

3/ --, Medical Education in the United States 1969-1970, Reprinted from the Education Number of the Journal of the American Medical Association, 214 (November 23, 1970), pp. 1509-1510.

4/ Joel H. Goldberg, "How the Academic Physician Spends His Time," Hospital Physician, 5 (January 1969), pp. 61-62.

5/ American Medical Association, Money and Medical Schools, 28-29.

6/ Fein and Weber, 190.

7/ John Walsh, "Stanford School of Medicine (III): Varieties of Medical Experience," Science, February 26, 1971, p. 787.

8/ Fein and Weber, 205-206.

9/ Robert H. Ebert, "The Impact on Medical Schools of New Methods of Financing Medical Care," Journal of Medical Education, 45 (February 1970), 109.

10/ Charles V. Kidd, "The Institute Discussion: Research Emphasis and Research Itself," in Julius H. Comroe, Jr. (ed.), "Report of the Ninth Teaching Institute: Research and Medical Education," Journal of Medical Education, 37 (December 1962), 109-114.

11/ U.S., Congress, Senate, Committee on Labor and Public Welfare, Hearings, Oversight of Medical Care of Veterans Wounded in Vietnam, Part 2, 91st Cong., 2nd Sess., 1970, p. 906.

12/ U.S., Congress, House, Committee on Veterans' Affairs, VA Medical Program in Relation to Medical Schools Committee Print No. 170, 91st Cong., 2nd Sess., 1970, p. 330.

13/ U.S., Congress, House, Committee on Veterans' Affairs, Irregularities in the Salt Lake City, Utah, Veterans' Hospital and Other Stations, Committee Print No. 167, Part II, 91st Cong., 2nd Sess., 1970, p. 2222.

14/ Barbara S. Cooper and Mary McGee, National Health Expenditures, Fiscal Years 1929-70 and Calendar Years 1929-69, Research and Statistics Note No. 25--1970, U.S. Department of Health, Education, and Welfare, Social Security Administration, December 14, 1970, Tables 6-8.

15/ Arthur E. Hess, Deputy Commissioner, Social Security Administration, "Factors Affecting Graduate Medical Education in 1968," Remarks before the American College of Surgeons Clinical Congress, Atlantic City, N.J., October 14, 1968, p. 2.

16/ Report of the Staff to the Senate Committee on Finance, 72-79.

17/ Letter from the President and Secretary, Organization of University Health Center Administrators to the Secretary of Health, Education, and Welfare, February 12, 1971.

18/ Thomas M. Tierney, "Medicare and the Financing of Teaching Hospitals," Journal of Medical Education, 44 (October 1969), pp. 907-911.

19/ Vergil N. Slee, Richard P. Ament, and John P. Mull, "How Much Longer do Patients Stay in Major Teaching Hospitals?," PAS Reporter, February 24, 1969, p. 4.

20/ Bruce Taylor, Executive Vice President, Blue Cross of Greater Philadelphia, "Response to the Suggested Areas of Study Requested by Hon. Herbert S. Denenberg, Pennsylvania Insurance Commissioner," March 17, 1971, pp. 10-12.

21/ Lorraine Richter, Medicaid--As Observed by State Hospital Association Executives and Providers of Service, Bureau of Research Services, American Hospital Association, Chicago, Ill., February 12, 1970, pp. 3-9.

Reference to "financial distress" in medical and dental schools is hardly a new phenomenon. For example,

--"No matter what problems confront research in medical schools, they fade in the presence of the acute and dangerous general financial stringency faced by the schools." Surgeon General's Committee on Medical School Grants and Finances, 1950

--"At the very time that medical schools are being pressed to train more physicians, they find it harder than ever to obtain the necessary funds."1/ President's Commission on the Health Needs of the Nation, 1952

--"The poor financial condition of a relatively small group of schools is of serious concern. At a time when the nation needs a number of new schools, it would be most unfortunate if even one were forced to close its doors because of a lack of funds to carry on an adequate teaching program. Several schools face that possibility."2/ AMA Council on Medical Education and Hospitals, 1963

--Testimony presented to the committee indicates that a small number of medical schools are so weak and poorly financed that it is doubtful that they can continue to provide acceptable education without more institutional support.

* * * * *

Information submitted to the committee indicates that at least 10 medical schools are in serious financial straits; 3 dental schools have already been placed on provisional accreditation,....

* * * * *

It has been stated to the committee that, as of 1964, one-third of all the dental schools are considered to be in serious financial trouble."3/ Report of the House Committee on Interstate and Foreign Commerce on the "Health Professions Educational Assistance Amendments of 1965"

How have State governments reacted?

What actions has Congress taken in response to these appeals?

The State Response

--in the ten-year period from academic year 1958-59 to 1968-69, State appropriations for regular operating programs in medical schools increased by an average amount of 13% annually.4/

--based on data furnished by the AAMC, for 1969-70 State appropriations to support the operations of publicly-owned medical schools approximated $234 million.

--the increase in State assistance to privately owned schools has been especially dramatic. In 1960-61, only three States provided subsidies to their private schools. The roster now encompasses Florida, Pennsylvania, New York, North Carolina, Illinois, Ohio, Wisconsin, and Texas. Assistance has also been authorized, but no funds appropriated as yet, in Maryland. Twenty-six of the forty-six privately owned medical schools are situated within the boundaries of these nine States.

--in seven States the amount of support is determined on a capitation basis. Wisconsin uses a negotiation basis, and Pennsylvania utilizes both methods. For 1969-70, application of the varying methods resulted in State subsidies of $19 million to privately owned medical schools.

--during the same time period, State appropriations to support the operations of publicly owned dental schools were almost $47 million.

--information supplied by the American Association of Dental Schools regarding State assistance to privately owned dental schools is not as complete as that available in the medical area. Michigan, Missouri, and Illinois all provide a subsidy to their private schools. Pennsylvania is in the same category, but the funds are channeled through the parent university rather than going directly to the dental school. No accurate figure is available regarding the total dollar amount of this support.

--regional educational organizations also provide direct support to medical and dental schools. In the medical area, for example, the New England Board of Higher Education contracts with the University of Vermont for preferential acceptance of qualified residents from four New England States. The Southern Regional Education Board has the same type of arrangement with Meharry, and the Western Interstate Commission for Higher Education deals with fifteen schools in several Western States. The State of Delaware has entered into a similar contractual agreement with one of the Philadelphia medical schools.

The Federal Response

In 1965, Congress enacted the first program of operational support for medical, dental, and other health professions schools. Formula grants were made available to generally improve the quality of the educational process. In addition, special project grants could be awarded "to maintain or provide for the accreditation of a school and to contribute or provide for carrying out nationally important and specialized functions that a school might fulfill." A statutory ceiling of $300,000 for fiscal 1968 and $400,000 for fiscal 1969 was established on the amount of a grant to any single school.

From an administrative standpoint, project grant funds were in fact awarded almost exclusively on the basis of relative financial need.

The authorizing legislation came up for renewal in 1968, at which time Congress extended and broadened both the formula and project grant authorities. "To assist schools which are in serious financial straits to meet the costs of operation, or to assist schools which have special need for financial assistance in meeting their accreditation requirements" became one of seven specified purposes of the revised project grant program effective with fiscal 1970. The previous ceiling on individual project grant awards was also removed effective in fiscal 1969.

In reporting out the 1968 legislation, the Senate Committee on Labor and Public Welfare remarked that:

> The committee expects that emphasis will be placed on the problem of schools that are in danger of closing or losing their accreditation in the award of special project grants.[5]

Likewise, the House Committee on Interstate and Foreign Commerce noted that:

> One of the principal purposes of the special project grant is the assistance--even the saving--of health professions schools in serious financial difficulties.
>
> * * * * *
>
> It is not possible at this time to predict the amounts that would be necessary to save some of these schools, and it is for this reason that it is proposed to delete the statutory ceiling on project grants.
>
> * * * * *
>
> Except where serious need is shown, however, such grants should not exceed $400,000, the present ceiling.[6]

NIH's Bureau of Health Manpower Education decided to continue handling large project grant applications based on serious financial need within the framework of the already established study section-advisory council review mechanism. Beginning with the 1970 review cycle, however, guidelines were established for in depth evaluation of each such application. Attention was to be focused on exploring the organizational and environmental setting of the school; the financial status as displayed, for example, in annual expenditure reports to the AAMC or American Dental Association; the availability of faculty; the school's analysis of the problems confronting it and long-range plans for alleviation of identified problems; the status of the clinical program; and, relationships in the teaching programs relevant to the school's application.

New "financial distress" awards made in fiscal 1970 for the 1970-71 academic year were limited to one year's duration, with opportunity for renewal at the end of that time period. In the spring of 1971, this policy was extended to all such awards, both continuing and new.

From fiscal 1968 through 1971, NIH has awarded $108.4 million to medical and dental schools based initially on "relative financial need" and, more recently, on "financial distress." The distribution of these awards is as follows:

(In thousands)

Fiscal Year	Medical Schools	Dental Schools	Total
1968	$ 5,477	$ 2,689	$ 8,166
1969	18,370	7,515	25,885
1970	21,493	10,377	31,870
1971	28,927	13,523	42,450
Grand total	$ 74,267	$ 34,104	$108,371

Since the inception of the project grant program in 1968, only one school which received an award based on relative financial need or financial distress is no longer receiving grant support. This one exception, a medical school, was awarded support solely for the purchase of educational equipment incident to an earlier construction project. No extension of the grant was requested upon completion of the original project period.

Every dental school and all but three medical schools are using their project grant funds for the support of faculty salaries. In many cases, this is supplemented by salary support for technical and administrative personnel, assistance for the purchase of supplies and equipment, etc.

Awards to Medical Schools in Financial Difficulty*

(Dollars in Thousands)

All Schools	FY 1968 Total Amount	FY 1968 No.	FY 1968 Avg. Amount	FY 1969 Total Amount	FY 1969 No.	FY 1969 Avg. Amount	FY 1970 Total Amount	FY 1970 No.	FY 1970 Avg. Amount
Under $400	$5,477	23	$ 238	$10,995	39	$ 282	$ 9,481	32	$ 296
$400	--	--	--	3,600	9	400	4,000	10	400
$400-1,000	--	--	--	3,775	6	629	8,012	13	616
Over $1,000	--	--	--	--	--	--	--	--	--
Total	$5,477	23	$ 238	$18,370	54	$ 340	$21,493	55	$ 391
Public Schools									
Under $400	$1,954	9	$ 217	$ 6,486	24	$ 270	$ 5,860	20	$ 293
$400	--	--	--	800	2	400	2,000	5	400
$400-1,000	--	--	--	699	1	699	1,357	2	679
Over $1,000	--	--	--	--	--	--	--		--
Total	$1,954	9	$ 217	$ 7,986	27	$ 296	$ 9,217	27	$ 341
Private Schools									
Under $400	$3,522	14	$ 252	$ 4,508	15	$ 301	$ 3,622	12	$ 302
$400	--	--	--	2,800	7	400	2,000	5	400
$400-1,000	--	--	--	3,076	5	615	6,655	11	605
Over $1,000	--	--	--	--	--	--	--	--	--
Total	$3,522	14	$ 252	$10,384	27	$ 385	$12,276	28	$ 438

* Totals may not add due to rounding.

Awards to Medical Schools in Financial Difficulty*

(Dollars in Thousands)

FY 1968		FY 1969			FY 1970			FY 1971		
No.	Avg. Amount	Total Amount	No.	Avg. Amount	Total Amount	No.	Avg. Amount	Total Amount	No.	Avg. Amount
23	$ 238	$10,995	39	$ 282	$ 9,481	32	$ 296	$10,906	37	$ 295
--	--	3,600	9	400	4,000	10	400	1,600	4	400
--	--	3,775	6	629	8,012	13	616	8,060	12	672
--	--	--	--	--	--	--	--	8,360	5	1,672
23	$ 238	$18,370	54	$ 340	$21,493	55	$ 391	$28,927	58	$ 499
9	$ 217	$ 6,486	24	$ 270	$ 5,860	20	$ 293	$ 6,986	24	$ 291
--	--	800	2	400	2,000	5	400	400	1	400
--	--	699	1	699	1,357	2	679	1,219	2	610
--	--	--	--	--	--		--	--	--	--
9	$ 217	$ 7,986	27	$ 296	$ 9,217	27	$ 341	$ 8,606	27	$ 319
14	$ 252	$ 4,508	15	$ 301	$ 3,622	12	$ 302	$ 3,920	13	$ 302
--	--	2,800	7	400	2,000	5	400	1,200	3	400
--	--	3,076	5	615	6,655	11	605	6,841	10	684
--	--	--	--	--	--	--	--	8,360	5	1,672
14	$ 252	$10,384	27	$ 385	$12,276	28	$ 438	$20,321	31	$ 655

rounding.

Awards to Dental Schools in Financial Difficulty*

(Dollars in Thousands)

All Schools	FY 1968 Total Amount	FY 1968 No.	FY 1968 Avg. Amount	FY 1969 Total Amount	FY 1969 No.	FY 1969 Avg. Amount	FY 1970 Total Amount	FY 1970 No.	FY 1970 Avg. Amount
Under $400	$2,689	11	$ 244	$3,105	13	$ 239	$3,789	15	$ 253
$400	-	-	-	1,600	4	400	800	2	400
$400-1,000	-	-	-	1,726	3	575	4,624	7	661
Over 1,000	-	-	-	1,084	1	1,084	1,164	1	1,164
Total	$2,689	11	$ 244	$7,515	21	$ 358	$10,377	25	$ 415
Public Schools									
Under $400	$ 343	2	$ 171	$1,509	7	$ 216	$1,581	7	$ 226
$400	-	-	-	-	-	-	-	-	-
$400-1,000	-	-	-	-	-	-	-	-	-
Over 1,000	-	-	-	-	-	-	-	-	-
Total	$ 343	2	$ 171	$1,509	7	$ 216	$1,581	7	$ 226
Private Schools									
Under $400	$2,346	9	$ 261	$1,596	6	$ 266	$2,209	8	$ 276
$400	-	-	-	1,600	4	400	800	2	400
$400-1,000	-	-	-	1,726	3	575	4,624	7	661
Over 1,000	-	-	-	1,084	1	1,084	1,164	1	1,164
Total	$2,346	9	$ 261	$6,006	14	$ 429	$8,796	18	$ 489

* Totals may not add due to rounding.

Awards to Dental Schools in Financial Difficulty* 37B

(Dollars in Thousands)

1968		FY 1969			FY 1970			FY 1971		
o.	Avg. Amount	Total Amount	No.	Avg. Amount	Total Amount	No.	Avg. Amount	Total Amount	No.	Avg. Amount
1	$ [illegible]4	$3,105	13	$ 239	$3,789	15	$ 253	$3,810	16	$ 238
	-	1,600	4	400	800	2	400	800	2	400
	-	1,726	3	575	4,624	7	661	4,078	5	816
	-	1,084	1	1,084	1,164	1	1,164	4,836	4	1,209
1	$ 244	$7,515	21	$ 358	$10,377	25	$ 415	$13,523	27	$ 501
2	$ 171	$1,509	7	$ 216	$1,581	7	$ 226	$1,630	7	$ 233
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-
2	$ 171	$1,509	7	$ 216	$1,581	7	$ 226	$1,630	7	$ 233
	$ 261	$1,596	6	$ 266	$2,209	8	$ 276	$2,180	9	$ 242
	-	1,600	4	400	800	2	400	800	2	400
	-	1,726	3	575	4,624	7	661	4,078	5	816
	-	1,084	1	1,084	1,164	1	1,164	4,836	4	1,209
	$ 261	$6,006	14	$ 429	$8,796	18	$ 489	$11,894	20	$ 595

nding.

What are the causes of "financial distress"?

A number of reasons have been advanced by various authorities, and much of the remainder of the report will be devoted to an examination of the causes cited here.

A. Editorial, AMA Journal:

"(a) the medical schools suffer from the inflationary pressures of the economy, with special effects on an institution dealing only in services; (b) the schools have the financial problems common to all educational institutions, with special emphasis on the fact that the faculty and other medical personnel needed are in unusually short supply; and (c) the schools have a special need to respond to public pressure relating to health care and the education of personnel to provide that care.

* * * * *

The well-known restrictions on federal research and research training expenditures strain the school's ability to maintain faculty stability, in spite of relatively large amounts of new money to support medical care programs. Faculty members once supported on research projects are not readily shifted to programs of immediate community and clinical impact."7/

B. President-elect, Assembly of the Association of American Medical Colleges:

"One of the consequences of the rapid and massive expansion of research support was the obscuring of the basic financial instability of the entire structure of medical education.

Medical education has always been the highest cost element of higher education because of the unique laboratory and patient care activities intrinsic to the education of the M.D. These higher costs have now been compounded by the price-wage spiral . . . .

* * * * *

Budgetary pressures . . . resulted in a progressive decline in the flow of research funds to academic health centers which heretofore have been the principal element of Federal support.

* * * * *

The national programs initiated to expand the production of physicians made no provision to correct the underlying financial problems of medical schools, nor have these programs been funded at anywhere near the full measure of the needs and costs involved in responding to them.

Reimbursement under Medicare, Medicaid, and other third-party payment mechanisms for patient care provided in academic health centers has allowed little recognition of the higher operating costs involved.

Student assistance funds to support the intensive efforts of medical schools to increase the matriculation of minority and disadvantaged students . . . have been progressively cut back . . . leaving the schools with burdensome commitments . . . ."8/

C. Dean, University of Oregon Dental School:

"Some of the problems that come to mind in relation to institutional budget crises are:

1. Private endowments are not generating satisfactory returns to stem the erosion caused by a sustained escalation of operating costs.

* * * * *

2. Professional fund raising is not as productive as in the past or the effort is not as enthusiastic or sustained.
3. Tuition and fees of private schools cannot be increased indefinitely, ...
4. Major building programs for medical centers have been initiated or completed with accompanying underestimated construction and operating costs.

* * * * *

5. Reduction in support of research, research training and fellowships, have forced the use of other funds to honor institutional commitments to faculty.
6. Losses in fee income for patient treatment in medical centers have occurred as a result of hospital insurance, prepaid dental care plans, Medicare and Medicaid which reduce fees to the cost of care, with the attendant loss of a monetary buffer to support the care of indigent patients; . . . .
7. The demand for major expansion of existing programs, including enrollment increases has created funding problems.

* * * * *

8. The expectation that essential new programs will be absorbed into existing institutional resources.
9. Some states have experienced fiscal crises in meeting their commitments; . . .; some legislators have had punitive attitudes toward higher education that adversely affect institutional budgets.
10. The management of institutional resources may be questionable. Surprisingly, some schools in fiscal crisis also demonstrate some of the highest educational costs per student per year."9/

What are the characteristics of schools receiving NIH special project grant awards based on relative need or financial distress?

A. Ownership	Medical Schools		Dental Schools
	All Schools*	Project grant recipients	All Schools
Public	55	27	27
Private	46	31	26

B. Geographic location by census region

New England	8	4	3
Middle Atlantic	20	10	8
South Atlantic	17	14	10
East North Central	15	9	9
East South Central	7	6	5
West North Central	10	7	7
West South Central	9	3	4
Mountain	4	3	-
Pacific	11	2	7
	101	58	53

C. University affiliation	Yes	No	Unknown
Medical Schools	51	7	--
Dental Schools	26	1	--

D. Accreditation problems reported to exist			
Medical Schools	16	42	--
Dental Schools	13	7	7

*In subsequent tables the number of medical schools will vary from 101 to 104 depending upon the extent inclusion of developing schools in the source data.

of schools receiving NIH special project grant awards based on relative financial

Medical Schools		Dental Schools	
All Schools*	Project grant recipients	All Schools	Project grant recipients
55	27	27	7
46	31	26	20

nsus region

..... 8	 4	 3	 2
.....20	10	 8	 5
.....17	14	10	 5
.....15	 9	 9	 4
..... 7	 6	 5	 3
.....10	 7	 7	 4
..... 9	 3	 4	 1
..... 4	 3	..... -	..... -
..... 11	 2	 7	 3
101	58	53	27

Yes	No	Unknown
51	7	--
26	1	--

ported to exist

16	42	--
13	7	7

ber of medical schools will vary from 101 to 104 depending upon the extent of ols in the source data.

E. Student body of project grant recipients as a proportion of the student body for all schools

Medical students	Dental students	Medical interns & residents	Graduate and postdoctoral students in the basic sciences	Clinical fe medicine an students in
55.8%	56.6%	51.6%	48.3%	35.

F. Faculty of project grant recipients as a proportion of faculty for all schools (Dental schools onl

Full-time faculty	Part-time faculty
46.6%	59.5%

roject grant recipients as a proportion of the student body for all schools

Dental students	Medical interns & residents	Graduate and postdoctoral students in the basic sciences	Clinical fellows in medicine and advanced students in dentistry
56.6%	51.6%	48.3%	35.5%

t grant recipients as a proportion of faculty for all schools (Dental schools only)

ll-time faculty	Part-time faculty
46.6%	59.5%

How do the recipients of financial need/financial distress support stand in terms of HEW obligations for research activities?

Table 2 displayed fiscal year 1970 obligations of Department of Health, Education, and W programs to components of university health science centers. The following table reflec research support segment of HEW obligations categorized by dollar interval, institutiona and receipt or non-receipt by the medical school of NIH special project grant funds base relative financial need or financial distress.

"Health science center" in this instance excludes the dental school, if any, while inclu school, other health and allied health professions schools such as pharmacy and nursing, teaching hospital(s), whether owned or affiliated.

Obligation Level for Research Activities	Public Institutions		Private Institutions		All I
	Project Grant Award Recipients	No Award	Project Grant Award Recipients	No Award	Project Gra Recipi
Under $2 million	13	10	9	2	22
$2 million--$4 million	7	5	7	-	14
$4 million--$6 million	4	5	3	-	7
$6 million--$8 million	1	5	6	-	7
$8 million--$10 million	2	-	4	3	6
$10 million--$15 million	-	3	1	4	1
$15 million--$25 million	-	3	1	5	1
Over $25 million	-	-	-	1	-
Total Number of Health Science Centers	27	31	31	15	58

of financial need/financial distress support stand in terms of HEW
rch activities?

cal year 1970 obligations of Department of Health, Education, and Welfare
s of university health science centers. The following table reflects the
ent of HEW obligations categorized by dollar interval, institutional ownership,
ceipt by the medical school of NIH special project grant funds based on
ed or financial distress.

r" in this instance excludes the dental school, if any, while including the medical
and allied health professions schools such as pharmacy and nursing, and the major
whether owned or affiliated.

ic Institutions		Private Institutions		All Institutions		Tota
ect Grant Award Recipients	No Award	Project Grant Award Recipients	No Award	Project Grant Award Recipients	No Award	
13	10	9	2	22	12	34
7	5	7	-	14	5	19
4	5	3	-	7	5	12
1	5	6	-	7	5	12
2	-	4	3	6	3	9
-	3	1	4	1	7	8
-	3	1	5	1	8	9
-	-	-	1	-	1	1
27	31	31	15	58	46	104

--36, or 62%, of the health science centers where the medical school is a special project grantee received HEW obligations of $4 million or less in fiscal 1970 for research activities.

--by the same token, only 2 of 18 health science centers receiving HEW obligations for research activities of $10 million or more in 1970 contain a medical school which is currently a recipient of a special project grant award based on relative financial need or financial distress.

--the relationship between comparatively low levels of HEW obligations for research activities and receipt of special project grant funds related to financial difficulties is especially noticeable among the publicly-owned institutions, where 13 of the 27 health science centers containing a project grant recipient are in the lowest dollar interval of HEW research support.

What is the correlation between loss of NIH research and research training support and medical school financial difficulties?

"Research support" as used herein consists of NIH research and research training grant awards to medical schools. This analysis is not comparable to the previous display of obligations for research activities, in part because of differences in organizational coverage (medical school rather than health science center) and in granting agency (NIH rather than HEW).

Recipients of special project grant awards based on relative financial need or financial distress were initially segregated from the full 101 approved medical schools. Schools receiving new or supplemental project grant awards in fiscal 1970 or 1971 were separately identified, since this group of institutions presumably would reflect the impact of declines in overall NIH extramural research funding which occurred from 1968 to 1969 and from 1969 to 1970.

All medical schools have been categorized based on the dollar interval of NIH research and research training awards to each school, using 1968 as the base year. Year-to-year changes in research and research training support are then reflected for the period 1968 to 1969, 1969 to 1970, and the two-year period 1968 to 1970. The final column of the following table reflects the composite dollar amount of fiscal 1971 financial need/financial distress awards for each applicable group of schools.

(Dollars in thousands)

Dollar intervals of FY 1968 research support	No. of institutions within each dollar interval	Year-to-year changes in aggregate research support 1969/1968	1970/1969	1970/1968	FY fi di
Recipients of financial need/distress project grant awards					
1) New or supplemental awards in FY 1970 or 1971					
Under $ 2,000	8	$(571)	$(431)	$(1,002)	
$2,000- 4,000	5	415	(1,043)	(628)	
$4,000- 6,000	2	2,162	(1,372)	790	
$6,000- 8,000	1	(134)	98	(36)	
$8,000-10,000	1	246	(118)	128	
Over $10,000	1	193	(549)	(356)	
Total	18	$2,311	$(3,415)	$(1,104)	$
2) Initial special project awards prior to FY 1970					
Under $2,000	18	$(973)	$(389)	$(1,362)	
$2,000-4,000	16	19	(2,349)	(2,330)	
$4,000-6,000	5	1,103	440	1,543	
$6,000-8,000	1	(314)	(37)	(351)	
Total	40	$(165)	$(2,335)	$(2,500)	$
Medical schools not receiving project grants based on financial difficulties					
Under $ 2,000	12	$3,633	$2,681	$ 6,314	
$2,000- 4,000	9	1,310	(1,421)	(111)	
$4,000- 6,000	6	(959)	(1,245)	(2,204)	
$6,000- 8,000	--	--	--	--	
$8,000-10,000	3	(2,258)	(25)	(2,283)	
Over $10,000	13	2,204	(1,003)	1,201	
Total	43	$3,930	$(1,013)	$2,917	

(Dollars in thousands)

No. of institutions within each dollar interval	Year-to-year changes in aggregate research support 1969/1968	1970/1969	1970/1968	FY 1971 financial need/ distress awards
ed/distress project grant awards				
ards in FY 1970 or 1971				
8	$(571)	$(431)	$(1,002)	$5,869
5	415	(1,043)	(628)	5,633
2	2,162	(1,372)	790	1,592
1	(134)	98	(36)	400
1	246	(118)	128	354
1	193	(549)	(356)	1,500
18	$2,311	$(3,415)	$(1,104)	$15,348
t awards prior to FY 1970				
18	$(973)	$(389)	$(1,362)	$7,017
16	19	(2,349)	(2,330)	4,793
5	1,103	440	1,543	1,482
1	(314)	(37)	(351)	286
40	$(165)	$(2,335)	$(2,500)	$13,578
ing project grants based on financial difficulties				
12	$3,633	$2,681	$ 6,314	
9	1,310	(1,421)	(111)	
6	(959)	(1,245)	(2,204)	
--	--	--	--	
3	(2,258)	(25)	(2,283)	
13	2,204	(1,003)	1,201	
43	$3,930	$(1,013)	$2,917	

--in the aggregate, all three groupings of medical schools suffered a decline in research and research training awards from fiscal 1969 to 1970. This ranged from $3.4 million for the 18 schools receiving new or supplemental financial need/financial distress project grants in fiscal 1970 or 1971 to slightly over $1 million for the 43 medical schools not receiving special grants related to financial difficulties.

--over the two-year period from 1968 to 1970, only recipients of special project grant awards based on relative financial need or financial distress suffered a loss of NIH research and research training support. This amounted to $3.6 million for the 58 schools in this position, whereas the 43 schools who are not special project grant recipients showed a net increase over the same time period of $2.9 million.

--within the three categories, there is no consistent relationship between changes in the level of research and research training support and successful competition for a financial need/financial distress award. For example, of the schools in the $4-6 million research and research training award interval, the two groupings of special project grant recipients show a net gain over the period from 1968 to 1970, while the six schools not receiving special project grants related to financial need or financial distress lost a total of $2.2 million over the same time period.

--schools receiving large amounts of NIH research and research training support are generally not recipients of financial need/financial distress grants, despite some sizable declines in research awards. Three schools in the $8-10 million interval of research support, for example, lost close to $2.3 million in the aggregate over the 1968-1970 period but are not receiving special project grants based on financial difficulties.

--there is no correlation between the magnitude of losses in research and research training support and the amount of financial distress awards funded in fiscal 1971. To illustrate, the 18 schools with new or supplemental special project grants in 1970 or 1971 lost $1.1 million in research support over the two-year period ending in fiscal 1970, but received in excess of $15.3 million in financial need/financial distress awards in 1971.

Is there any clearcut relationship between minority student enrollment and receipt of project suppor financial difficultites in the operation of a school?

(Minority students expressed as a percentage of total medical/dental student e

	Medial Schools			Dental Schools		
	Public	Private	Composite	Public	Private	Co
A. All schools						
Recipients of financial need/ distress awards	2.3%	8.1%	5.5%	4.2%	6.9%	
Schools not receiving project grants based on financial difficulties	3.2	4.1	3.5	2.7	6.5	
B. Schools excluding Howard and Meharry						
Recipients of financial need/ distress awards	2.3	3.2	2.8	4.2	2.5	
Schools not receiving project grants based on financial difficulties	3.2	4.1	3.5	2.7	6.5	

--further analysis is required to determine whether the somewhat lower percentage of minority student among financial need/financial distress award recipients, excluding Howard and Meharry, is attributa financial problems.

--conversely there is no indication, at least in the aggregate and again excluding Howard and Meharry recipients of special project grant awards are overextended in the area of miniority student enroll comparison to all other schools.

tionship between minority student enrollment and receipt of project support based on
the operation of a school?

ority students expressed as a percentage of total medical/dental student enrollment) 10/ 11/

	Medial Schools			Dental Schools		
	Public	Private	Composite	Public	Private	Composite
l need/	2.3%	8.1%	5.5%	4.2%	6.9%	6.2%
project ial	3.2	4.1	3.5	2.7	6.5	3.4
rd						
l need/	2.3	3.2	2.8	4.2	2.5	3.0
project ial	3.2	4.1	3.5	2.7	6.5	3.4

red to determine whether the somewhat lower percentage of minority student enrollment
ncial distress award recipients, excluding Howard and Meharry, is attributable to their

dication, at least in the aggregate and again excluding Howard and Meharry that
ject grant awards are overextended in the area of miniority student enrollment in
chools.

How deeply are medical and dental schools involved in Federally sponsored community service progr

The different community service grant-in-aid programs use varying terminology in characterizing d of involvement. For purposes of this analysis, "primary involvement" is synonymous with grantee, administering agency, or applicant. "Secondary involvement" encompasses affiliate, utilization c teaching hospital as a back-up facility for a free-standing clinic operation, or representation c administrative bodies of persons connected with a medical or dental school or a major teaching ho

The numerical data relating to medical schools also incorporates the participation of those hospi the AMA Council on Medical Education classified in mid-1969 as major teaching units in the medica teaching program. Categorization of hospitals in the following table hinges upon whether or not affiliated medical school is a recipient of a special project grant based on relative financial n financial distress.

	Medical School/Major Affiliated Teaching Hospital		Dental School	
	Primary Involvement	Secondary Involvement	Primary Involvement	Secon Involve
A. OEO & HSMHA comprehensive health service programs				
Recipients of financial need/ distress awards	15	22	Not Available	
Schools not receiving project grants based on financial difficulties	3	24	"	"
B. Children & youth, maternity & infant care, & HSMHA family planning service projects				
Recipients of financial need/ distress awards	21	52	--	
Schools not receiving project grants based on financial difficulties	16	31	--	

nd dental schools involved in Federally sponsored community service programs?

service grant-in-aid programs use varying terminology in characterizing degrees
rposes of this analysis, "primary involvement" is synonymous with grantee,
applicant. "Secondary involvement" encompasses affiliate, utilization of
ack-up facility for a free-standing clinic operation, or representation on project
persons connected with a medical or dental school or a major teaching hospital.

ing to medical schools also incorporates the participation of those hospitals which
al Education classified in mid-1969 as major teaching units in the medical school
orization of hospitals in the following table hinges upon whether or not the
l is a recipient of a special project grant based on relative financial need/

	Medical School/Major Affiliated Teaching Hospital		Dental School	
	Primary Involvement	Secondary Involvement	Primary Involvement	Secondary Involvement
d/	15	22	Not Available	
ct ifficulties	3	24	"	"
&				
d/	21	52	--	19
ct ifficulties	16	31	--	9

	Medical School/Major Affiliated Teaching Hospital		Pri
	Primary Involvement	Secondary Involvement	Invol
C. Community mental health programs			
Recipients of financial need/ distress awards	13	19	
Schools not receiving project grants based on financial difficulties	4	13	
D. Regional medical programs			
Recipients of financial need/ distress awards	19	107	
Schools not receiving project grants based on financial difficulties	19	80	

	Medical School/Major Affiliated Teaching Hospital		Dental School	
	Primary Involvement	Secondary Involvement	Primary Involvement	Secondary Involvement
th programs				
al need/	13	19	--	--
project cial difficulties	4	13	--	--
rams				
al need/	19	107	--	8
project grants fficulties	19	80	--	12

Are Federally sponsored community service projects causing financial hardship among the participating medical and dental schools?

--While the foregoing analysis shows a clear correlation between existence of financial difficulty as measured by the receipt of NIH special project grant support and involvement with varying types of community service projects, it is not clear which is cause and which is effect.

--Do schools in financial trouble undertake projects of this kind as a desperate expedient to gain additional income? Or, does at least part of the financial difficulty stem from losses incurred in operation of a community service project?

--This issue was posed to management representatives of seven medical schools. As a group, these schools are grantees for two comprehensive health service programs, three maternal and child health projects, and two regional medical programs. There is also extensive "secondary involvement" with service-oriented programs.

--In only one instance, involving a maternal and child health project, did an institution contend that grant income was not at least equal to the cost being incurred. Repeated statements were made to the effect that Federally sponsored service projects were, in effect, being operated on a self-sustaining basis.

--Reference was made in one conversation to losses incurred in connection with professional staffing of a municipal hospital serving a predominantly indigent population. Even though a "money loser," this was a commitment which could not be avoided, either morally or pragmatically, recognizing community expectations and pressures.

--Review of the justification material furnished in connection with successful medical and dental school applications for NIH special project grant awards also failed to identify a single reference to losses on Federally sponsored community service projects as a contributing factor to the applicant's financial difficulties.

--In summary, and despite the surface correlation, there is no hard evidence implicating Federally sponsored community service projects per se as a cause or major contributing factor to financial difficulty in medical and dental school operations. Losses incurred in "community service" programs in their broadest sense such as, for example, operation of hospital emergency rooms and outpatient clinics are, on the other hand, likely to represent a major drain on the total health science center.

What information have special project grant recipients furnished regarding their financial di

Bureau of Health Manpower Education grants management staff were requested to examine the app and any supporting material furnished by recipients of special project grant awards based on financial need or financial distress. Causes of the financial problem, expected duration, an solution, and management actions undertaken by the school were to be identified as specifica possible from the information on hand. No predetermined categories were employed. Rather, t shown on the following table have been classified based on the survey results furnished by gr management personnel.

Initally, the information culled from the grant files is arrayed for all 58 medical schools a schools receiving special project grant awards. For each category, the responses may exceed of grant recipients since some schools cited more than one cause, proposed solution, etc. Al included in the "all schools" tabulation, institutions receiving new, renewal, or supplementa project grant awards in fiscal 1971 for the 1971-1972 academic year have also been isolated f analysis. These are presumably the best documented of the financial need/financial distress on file with NIH.

	All Schools receiving project grants based on financial difficulties		Schools Receiving Ne Supplemental Grant Aw
	Medical Schools	Dental Schools	Medical Schools
A. Causes of the problem			
1) Reductions in or inadequate Federal, State, and/or university support	18	12	8
2) Inflation	8	6	5
3) Cost overruns on construction projects or higher than anticipated operational costs of new physical plant	5	7	4
4) Program and/or enrollment expansion	8	6	2
5) Other	3	5	3
6) No indication	28	1	2
B. Expected duration			
1) Indefinite	18	6	8
2) One-three years	2	-	2
3) Three-five years	3	3	2
4) No indication	35	18	6

ave special project grant recipients furnished regarding their financial difficulties?

anpower Education grants management staff were requested to examine the applications material furnished by recipients of special project grant awards based on relative financial distress. Causes of the financial problem, expected duration, anticipated agement actions undertaken by the school were to be identified as specifically as information on hand. No predetermined categories were employed. Rather, the responses wing table have been classified based on the survey results furnished by grants nel.

ormation culled from the grant files is arrayed for all 58 medical schools and 27 dental special project grant awards. For each category, the responses may exceed the number ts since some schools cited more than one cause, proposed solution, etc. Although all schools" tabulation, institutions receiving new, renewal, or supplemental special rds in fiscal 1971 for the 1971-1972 academic year have also been isolated for separate are presumably the best documented of the financial need/financial distress applications

	All Schools receiving project grants based on financial difficulties		Schools Receiving New, Renewal, or Supplemental Grant Awards in FY 1971	
	Medical Schools	Dental Schools	Medical Schools	Dental Schools
problem				
ate Federal, support	18	12	8	6
	8	6	5	4
ction projects ed operational ant	5	7	4	5
t expansion	8	6	2	3
	3	5	3	2
	28	1	2	-
tion				
	18	6	8	3
	2	-	2	-
	3	3	2	1
	35	18	6	11

	All Schools receiving project grants based on financial difficulties		Schools Rece Supplemental
	Medical Schools	Dental Schools	Medical Scho
C. Anticipated or proposed solution			
1) State and/or Federal support	12	11	5
2) Private fund-raising campaign	9	4	6
3) Higher tuition	6	1	6
4) Generate additional professional service income	3	1	2
5) Tighter budgeting and planning	3	-	2
6) Increased enrollment	2	-	2
7) Other	1	1	1
8) No indication	33	12	2
D. Management actions undertaken			
1) Improved management direction	10	-	7
2) Freeze on hiring, promotions, or salaries	4	8	4
3) Other	5	4	2
4) No indication	41	19	7

--perhaps the most impressive aspect of the foregoing tabular analysis is the large number of responses

--even where more definitive information could be obtained from the grant file, the degree of wanting in some instances (e.g., "inadequate Federal, State, and/or university support" as a problem)

--in evaluating the results of this analysis, it is impossible to attach relative weights to (a of documentation as reflected in the special project grant files, and (b) the inability or u applicants to address specific causes, solutions, etc.

All Schools receiving project grants based on financial difficulties		Schools Receiving New, Renewal, or Supplemental Grant Awards in FY 1971	
Medical Schools	Dental Schools	Medical Schools	Dental Schools
osed solution			
12	11	5	9
9	4	6	3
6	1	6	-
3	1	2	-
3	-	2	-
2	-	2	-
1	1	1	-
33	12	2	5
undertaken			
10	-	7	-
4	8	4	3
5	4	2	4
41	19	7	9

aspect of the foregoing tabular analysis is the large number of "no indication"

information could be obtained from the grant file, the degree of specificity is
e.g., "inadequate Federal, State, and/or university support" as a cause of the

f this analysis, it is impossible to attach relative weights to (a) the inadequacies
ed in the special project grant files, and (b) the inability or unwillingness of
fic causes, solutions, etc.

How comparable are tuition charges in medical schools and undergraduate components of the univ

Using estimated medical school tuition and fees for academic year 1970-71, comparisons were ma undergraduate tuition and fees for a typical full-time student at the parent university report Office of Education's Higher Education General Information Survey (HEGIS). 12/ This analysis possible for seventy-one medical schools with university affiliations. Since only a much more coverage could be undertaken for dental schools, that aspect of the original analysis was not

Caution must be exercised in interpreting the following results since HEGIS data presumably re actual charges while the medical school tuition rates are advance estimates which conceivably have been changed at a later date. More importantly, this was OE's initial attempt to compile student charge data in this manner.

Under the classification scheme adopted, the comparisons within privately controlled universit except in certain special situations, reflected in the "resident tuition" columns. Within the institution, there are instances where the resident tuition for medical students exceeds that undergraduates, but the situation is reversed with regard to non-resident tuitions. The oppos situation also occurs.

	Recipients of financial need/distress awards		Medical schools not grants based on fina
	Resident tuition	Non-resident tuition	Resident tuition Non
A. Medical school tuition less than undergraduate tuition by:			
$501-750	--	--	1
$251-500	4	--	3
$101-250	5	4	2
up to $100	3	--	4
B. Medical school tuition exceeds undergraduate tuition by:			
up to $100	4	3	6
$101-250	10	7	4
$251-500	10	4	10
$501-750	4	1	1
$751-1,000	--	--	--
over $1,000	--	1	--

in medical schools and undergraduate components of the university?

tion and fees for academic year 1970-71, comparisons were made with
a typical full-time student at the parent university reported in the
tion General Information Survey (HEGIS). 12/ This analysis was
chools with university affiliations. Since only a much more limited
ental schools, that aspect of the original analysis was not pursued.

preting the following results since HEGIS data presumably represents
chool tuition rates are advance estimates which conceivably could
More importantly, this was OE's initial attempt to compile basic
.

opted, the comparisons within privately controlled universities are,
ns, reflected in the "resident tuition" columns. Within the same
here the resident tuition for medical students exceeds that of
is reversed with regard to non-resident tuitions. The opposite

Recipients of financial need/distress awards		Medical schools not receiving project grants based on financial difficulties	
Resident tuition	Non-resident tuition	Resident tuition	Non-resident tuition
--	--	1	2
4	--	3	1
5	4	2	4
3	--	4	--
4	3	6	3
10	7	4	--
10	4	10	7
4	1	1	2
--	--	--	1
--	1	--	--

--even acknowledging the caveats surrounding the foregoing data, it is unclear why any medical school receiving project grant support based on relative financial need or financial distress should have a tuition rate below that identified for the undergraduate component of the parent university.

--among this particular group of financial need/distress award recipients, in two cases the medical school tuition for both residents and non-residents are below those established for undergraduates, in ten instances the differential is only in the area of resident tuition, and in another two cases the variance is solely in non-resident tuitions.

--of the fourteen medical schools in the group of special project grant recipients with tuition rates below that of the undergraduate component of the parent university, four are publicly-controlled and ten are privately-controlled.

--fourteen medical schools not receiving project grants based on financial difficulties showed one or more tuition rates below the comparable undergraduate tuition. In three schools tuition and fees for both residents and non-residents are lower than the figures for undergraduates. In another seven instances the difference is in the tuition for residents, and in four cases the differential is solely in non-resident tuitions. This group of fourteen is equally divided between public and private institutions.

--in terms of absolute dollar amounts, medical school tuition and fees varied from an estimated low of $206 for the academic year to a high of $2,640.

Is further information available regarding the management actions undertaken by schools receiving special project grants based on financial difficulties?

--Cheit, in his recent study of financial conditions of 41 colleges and universities, cited a series of actions being undertaken by one or more institutions headed for financial difficulty or already in financial straits. 13/

--These actions were summarized in the form of a "check-list" and subsequently reviewed with representatives of five health science centers involved in the cost allocation studies to be discussed later. In addition, in-depth discussions were held with top management staff of two science centers in financial difficulty, but not participants in the cost studies.

--With regard to the first group of five, all are currently declining new obligations not already in the planning stage and avoiding outlays for programs which are only partially funded by government or other outside sources. All five are restraining building maintenance activities in one way or another, and two have either frozen or reduced expenditures for travel and purchase of equipment. Two have imposed a complete freeze and two more a partial freeze on hiring of new employees. Three have restrained salary increases for faculty and other staff.

--All five centers have raised medical school tuition and are lobbying for additional State support. Four have increased efforts to raise private funds. Three are not adding new administrative positions as they are needed, and the same number have formulated relatively specific plans for bringing income and outlays into balance over time.

--On the other hand, none of the five centers have cut funds for experimental programs, reduced student aid, or reduced salaries for faculty or other personnel. Only one has undertaken actions which Cheit characterizes as "marginal rather than major moves, for they do not alter the school, departmental, or basic program structure." 14/ Only two centers have adopted growth by substitution or adding only by reallocation as a planning constraint. None of the respondents have reduced course offerings or graduate programs, only one has cut the number of teaching and research assistants, and just two of the five are increasing student-faculty ratios.

--Turning to the other two health science centers referred to earlier, one is operating on a year-to-year basis under what is referred to as "crisis planning." Very little, if any, budgetary growth is occurring beyond mandatory increases. No new programs are being started unless both direct and indirect costs will be fully reimbursed. Several allied health training programs are being transferred to a State-supported technical institute, and consideration is being given to terminating another allied health program unless sustaining support can be obtained.

--The other center has drastically revised what was an admittedly very loose faculty tenure policy, in the process transferring salary responsibility for a sizable number of clinical faculty to an affiliated hospital. Tenure appointments have been frozen, and there is a clear determination to reduce the duration of the medical school's financial responsibility to faculty members who lose external salary support. In recognition of actual teaching requirements and to save outlays for fringe benefits, some clinical faculty are being converted from full-time to part-time status. New high-level management support personnel have been recruited to assist in direction of the multimillion dollar enterprise.

--Based on these several interviews and the management actions identified in the analysis of special project grant applications on file at NIH, certain of Cheit's observations regarding colleges and universities are equally applicable to the health science center. More specifically,

> Changes in structure . . . occur only at a minority of schools. The responses, other than these program responses, are generally of the belt-tightening variety.
>
> * * * * *
>
> Cuts tend to be of future program commitments or general rather than selective reallocations dictated by a system of priorities.
>
> * * * * *
>
> If we ask . . . whether the schools are doing enough to reduce expenditures and increase income in order to maximize their ability to resist the cost-income squeeze, then the answer one fairly derives from this study is 'not yet.' 15/

Footnotes

1/ Quoted in Fein and Weber, 196.

2/ American Medical Association, Money and Medical Schools, 43.

3/ U.S., Congress, House, Committee on Interstate and Foreign Commerce, Health Professions Educational Assistance Amendments of 1965, 89th Cong., 1st Sess., 1965, H. Rept. 781 to accompany H.R. 3141, pp. 16-18.

4/ American Medical Association, Medical Education in the United States 1969-1970, 1523.

5/ U.S., Congress, Senate, Committee on Labor and Public Welfare, Health Manpower Act of 1968, 90th Cong., 2nd Sess., 1968, S. Rept. 1307 to accompany S. 3095, pp. 5-15.

6/ U.S., Congress, House, Committee on Interstate and Foreign Commerce, Health Manpower Act of 1968, 90th Cong., 2nd Sess., 1968, H. Rept. 1634 to accompany H.R. 15757, pp. 31-32.

7/ American Medical Association, Medical Education in the United States 1969-1970, 1577.

8/ Russell A.Nelson, President of the Johns Hopkins Hospital and Chairman-elect of the Assembly of the Association of American Medical Colleges, "Health Manpower and the Academic Health Center," Statement presented before the Health Subcommittee of the Senate Committee on Labor and Public Welfare, March 4, 1971, pp. 16-19.

9/ Terkla, 2-5.

10/ Minority Student Opportunities in United States Medical Schools, 1970-1971, (Washington: Association of American Medical Colleges, 1970), pp. 1-159.

11/ "Minority Students Dental School Enrollment," Division of Educational Measurements, Council on Dental Education, American Dental Association, Chicago, Ill., October 15, 1970.

12/ Suellen Muldoon (ed.), Medical School Admission Requirements U.S.A. and Canada, 1969-70 (20th ed.; Washington: Association of American Medical Colleges, 1969), pp. 53-255.

13/ Earl F. Cheit, The New Depression in Higher Education: A Study of Financial Conditions at 41 Colleges and Universities, A General Report for The Carnegie Commission on Higher Education and the Ford Foundation (New York: McGraw-Hill Book Co., 1971), pp. 83-89, 95.

14/ Ibid., 87.

15/ Ibid., 142, 146, and 148.

A Brief History of Cost Allocation Studies

1958: Association of American Medical Colleges' Sponsored Study by Augustus Carroll

--Detailed examination of program costs in 19 medical colleges

--Publication of a standardized methodology for allocating program costs

1958: Emory University-Public Health Service Pilot Study to Determine the Cost of Medical Education

1962-1968: Yale-New Haven Study Sponsored by the AAMC, the American Hospital Association, and the American Medical Association

--Development of an analytical methodology for incorporation of the teaching hospital

1965: American Association of Dental Schools' Sponsored Study of the Cost of Dental Education in All U. S. and Canadian Dental Schools

1968-1969: AAMC-HEW Pilot Study of Program Cost Allocation in Seven Medical (Health Science) Centers

1969-1970: Extension of the Pilot Study to 14 Additional Centers

1970-1971: NIH Sponsored Study of Program Costs and Income in 17 Centers

In June of 1970--well before and independently of the congressional mandate for a Secretarial report on the need for emergency financial assistance to medical and dental schools--NIH's Bureau of Health Manpower Education contracted with 17 medical schools for the conduct of cost allocation studies.

According to Campbell,

"The earlier 7-Center Pilot Study had been undertaken in institutions carefully selected on the basis of:

"a. Previous experience with the concepts of . . . [cost allocation studies] and availability of basic data

b. Reputation for competent staff and ability to complete the project

c. A diversity of settings which would allow for a broad perspective of the goals and a variety of approaches to the [study] procedures." 1/

No such formal selection criteria were applied in connection with the 17-Center contracts. Other departures included (1) negotiation of the study contracts directly between NIH and the participating institutions, (2) a requirement for the allocation of income as well as costs, and (3) computation of cost-income comparisons by functional category. The Association of American Medical Colleges contracted to provide consultation to the study participants, developing the methodology for income allocation and assisting the 17-Centers to apply the previously formulated methodology for cost allocation.

Beginning with the Seven Center Pilot Study, the objectives of the cost allocation studies have been four-fold:

--Institutional self-study

--Further refinement of the cost analysis methodology

--Possible modification of reporting requirements of external (i.e., Federal) support agencies

--Development of comparative data

Participating institutions have been assured of maintenance of confidentiality.

Methodology and Structure of the Cost Allocation Studies

--Faculty effort reports are the basic data gathering instrument.

--"Instruction," meaning preparation for instruction, student counseling, and student contact, is an identifiable cost center or category for each type of "student" in the institution.

--The study methodology makes no attempt to identify as such the costs of research and patient service necessary for education purposes. Instead, it reflects the efforts of faculty, graduate assistants, senior residents, nursing staff, technicians, etc., attributable to the instruction of each category of student, such as, for example, undergraduate medical students. This distinction is highlighted in the subsequent tables by reference to costs of instruction rather than education.

--To put it another way, cost is allocated based on function (i.e., instruction) rather than by program (i.e., education).

--Income, on the other hand, is allocated to cost centers or categories based on the primary purpose for which it was generated, or where generated by a cost center, to that center.

--It could be argued, to cite an illustration, that tuition is intended to defray necessary research and service costs as well as pure "instruction" costs. Conceptually, this argument has validity.

--In practice, however, there is no consensus as to what constitutes "necessary" or "essential" research and service exposure. Nor are the terms of salary negotiations between health science center administrators and faculty sufficiently precise or susceptible of aggregation to use agreed upon distributions of time or effort as a basis for allocating tuition.

--Moreover, acceptance of this position would demand a "reverse flow" from "patient service" to "instruction." A prime example is Medicare Part A reimbursement for graduate medical, nursing, and allied health training which the current studies attribute entirely to "patient service." In sheer magnitude, this "reverse flow" into the "instruction" sub-categories would more than counterbalance a revised allocation for proportionally small sources of income like tuition.

--While admittedly imperfect, at this stage of methodological development income allocation by primary purpose or by generating activity is probably the soundest approach which may be employed.

--It is also essential to recognize that the studies are a "slice-in-time" approach and not a dynamic representation of health science center operations. They depict the situation as it was during a single fiscal year, rather than as it may be today or tomorrow.

General Guidelines Developed by the AAMC to Assist Faculty Members in Estimating "Per Cent of Effort" to Health Science Center Functions

Program cost finding is not an exact science. It relies to a great extent on the best judgment of intelligent persons directly involved in the activities under study. Exactness is not important and, if attempted, would be very costly it itself and wasteful of time.

1. Your estimate should be based on effort, and not hours per day, week, or year, expended on a program. You should completely disregard sources of salary and other income in estimating effort. The estimate should be based on your activity during the year, July 1, 1969 - June 30, 1970. Do not make the mistake of thinking only of activities of the past one or two months.

2. In your thinking give consideration to the character of the various teaching, research, and service programs to which you contributed, the nature of your contributions, the number of students involved, the number of employees supervised, the direct or indirect personal effort devoted to each of these responsibilities regardless of the source of income or whether efforts were expended in the medical school, hospital, clinic, at home, or just thinking on the way to and from work. The time involved is worthy of some consideration, but your review of the past year's work, interests, activities, responsibilities, and accomplishments should be aimed at the development of a round figure percentage estimate of the distribution of your total effort to each of the various programs to which you contributed. The distinction between time and effort is emphasized. If your effort on any program was less than 1 percent do not record it. However, the sum of your total professional effort in all recorded programs should equal 100 percent. This is also true for those who were employed for less than the 12 month period of this study.

3. Certain activities obviously overlap. For example, ward rounds on patients involve both care to patients as well as teaching and perhaps research. Depending on individual methods of teaching, some individuals may weigh patient care during this activity anywhere from five percent to fifty percent. Effort spent by the surgeon on operations is another example of an activity that has a divided function. It is hoped that each person will use his own good judgment in arriving at a proper percentage of effort in mixed activities.

4. Attendance at professional meetings is usually for the purpose of professional development, which ultimately reflects in better care of patients, better teaching, and better research. Again, please allocate effort expended in attendance at professional meetings to one or more of the major programs in your department. You should do the same for administrative activities. Each administrative job, whether it be assigned by the chairman of the department, whether involved with the administration of grants or committee activities, etc., can be related to, and should be considered as part of effort expended on a specific program.

5. In the last analysis, each individual is the best judge of the effort he expends on his various activities. However, you should feel free to consult with other members of your department, the chairman of your department, or with the Dean, if you have any questions.

SAMPLE EFFORT REPORT FORM

College of Medicine

Program Analysis for the Fiscal Year 1969-70

Name of Department	Academic Rank or Position Title	Name

Return to Dean's Office.

Carefully estimate the percentage of your total effort on behalf of the Department and the College that you devote to each program.

PROGRAM	% of Total Effort
1. Undergraduate Medical Instruction (M.D. Degree).	
2. Graduate Instruction (for Masters and Ph.D. Degree).	
3. Intern and Resident Instruction.	
4. Post-doctoral Instruction (Post-doctoral fellows and trainees)	
5. Continuing Medical Education (for practicing physicians)	
6. Other Instructional Programs (Dentistry, Nursing, Medical. . . . . Technology, Biological Sciences, Arts and Science, etc.)	
a. _____	
b. _____	
c. _____	
d. _____	
e. _____	
7. Research	
8. Advisory Services to Granting Agencies	
9. Community and Public Health Services	
10. Patient Services	
11. Medical Center-Medical College Administration and Services	
12. Other programs	
a. _____	
b. _____	
c. _____	
TOTAL	100 %

How reliable is faculty effort reporting?

No definitive or quantifiable answer can be provided to this very fundamental question. One can, however, consider the relative advantages and disadvantages of this information-gathering technique:

--effort reports by their very nature tend to be subjective and relatively easy to distort

--reporting can be unduly affected by the faculty member's work habits

--the reports can be biased by a desire to avoid conflicts between effort expended and income derived from various funding sources

--the respondent is required to separate multi-purpose activities into single purpose components

--meaningful review of completed effort reports is very difficult

On the other hand, effort reports:

--are the only measuring device generally considered acceptable by faculty and in general use in the university setting

--are relatively easy to prepare

--have a potential for validity which probably exceeds that possible through complete reliance on external observation of the faculty member

--allow for individuality of work habits

--equate to 100% of the individual's total activity on whatever base is desired

--when aggregated by department and ultimately for an entire school or health science center, have the potential for cancelling out biases and errors introduced by individual faculty members

There is also at least anecdotal evidence of the reliability of effort reporting in the sense that some institutions which have gathered the information over time are sufficiently confident to use the results in planning and budgeting exercises.

In summary, effort reporting is the best--indeed the only--basic data gathering tool operative at this time. It has yet to be definitively validated or, conversely, proven invalid.

Of the 17 cost allocation study contracts awarded by NIH in June of 1970, 14 reports were actually submitted by the due date of June 30, 1971. During the spring of 1971, contracts were also awarded to four other institutions who had previously conducted cost allocation studies and were willing to furnish updated results to the Government. In summary, then, 18 cost allocation studies have been available for analysis.

Every study has been examined by at least two members of the task group mentioned earlier. In each instance, one reviewer brought to bear an extensive background in cost accounting at both the university level and as an HEW negotiator with the academic community.

Face-to-face discussions were held, either on site or at NIH headquarters, between members of the task group and representatives of 13 institutions. Questions were raised by telephone or in writing with another 4 institutions. In a substantial number of cases, these contacts resulted in the submission of further information of a clarifying nature and/or revision of segments of the original document. No study was revised without the advance approval of the institutional representatives.

Prior to their "exclusion," each institution whose study was dropped from further consideration was either visited or contacted in some other fashion.

The major reasons for dropping studies for "cause" are as follows:

--failure to abide by the intent of the cost allocation study and incorporate at least the education-related components of the primary teaching hospital as well as the medical school

--inability to reconcile substantial internal discrepencies

--the fiscal year covered is considered by the institution to be grossly atypical and unrepresentative of subsequent operations

--utilization of admittedly preliminary accounting data for a portion of the report, with final (and different) data applied to other tabular exhibits

--extremely simplistic distribution of indirect costs with a resultant distortion of costs by functional category

--deviation from faculty effort reports or detailed analysis as a basis for cost distribution in favor of gross assumptions at a high level of functional aggregation

More than one of the aforementioned reasons is applicable in some cases.

In two instances, revised material simply arrived too late for further review and incorporation of results of the applicable cost studies in the data displays to follow.

Accordingly, of the original universe of 18 cost allocation study reports, the output of 11 studies forms the basis for all but one of the succeeding analyses.

How comparable are the cost allocation studies selected for display?

A. Period studied: Every institution used a fiscal year ending June 30, 1970. While one participant applied fiscal 1969 effort allocations against 1970 cost data, this does not appear to have created a material problem. The same hold true in those instances where the accounting period for an affiliated hospital was adjusted to coincide with June 30.

B. Definitions & instructions to faculty: As a general rule, participants adhered to the definitions and written instructions developed by the AAMC. Reflecting special programs or management concerns, many institutions went beyond the AAMC recommendations in sub-categorizing major functional elements. In all cases, these refinements are susceptible of merger into higher levels of aggregation.

C. Depth of effort reporting: At a minimum, all current paid faculty were asked to complete effort reports, with supportive personnel allocated to functions based on faculty effort. At the other extreme, effort reports were prepared by or for virtually all medical school and hospital personnel down to the janitorial level. Percentage of reports completed and returned to study coordinators was uniformly excellent.

D. Treatment of selected costs:

1) Fringe benefits--Without exception treated as direct charges.

2) Indirect costs--Allocation by functional category varies from a moderately high degree of analytical work to a simplistic ratio approach. However, tests indicate that these inconsistencies do not have a material effect when functions are combined and considered in aggregate terms.

3) Supporting services--Animal facilities, medical illustration, etc., essentially treated as direct costs. Minor variations have little impact on aggregate costs.

4) Equipment depreciation--Most institutions used actual equipment purchased and distributed the cost based upon function or straight ratios. Methodology and distribution by function do not produce a material distortion in the overall picture.

5) Plant depreciation--Included as part of total cost by only two institutions. In both cases, the amounts involved (e.g., $27 thousand) are relatively inconsequential.

E. Reconciliation to accounting records: Every institution stated or implied that they had reconciled the study, after adjustments, to the appropriate financial statements. Exact reconciliation is not possible where, for example, the study covered only a portion of an affiliated hospital.

F. Analytic tests employed:

1) Ratio of total indirect to total direct costs--Reflects a correlation based on the dollar volume of research, indicating economy of scale in a large research endeavor.

2) Ratio of patient service and research to total cost--Computed using both the functional definitions followed in the cost allocation studies and the revised definitions developed by the task group. With only two exceptions, a remarkable degree of correlation was found. Moreover, the reason for variation was readily identifiable since these are the two institutions which only partially captured cost and income related to affiliated hospitals.

Conclusion: When viewed in their totality, the cost studies selected for analysis exhibit a reasonable degree of comparability.

Who are the institutions whose cost allocation studies are being displayed?

--three of the eleven participants are publicly owned. Although the remainder are considered to be "private," with few exceptions, they also receive State appropriations for support of operational activities.

--during the study year all but one participant was engaged in training nurses and/or some type of allied health personnel. In addition, the studies contain complete coverage of two dental schools and a school of pharmacy.

--geographically, the participants are clustered in the Northeast and Midwest sections of the country, with a clear majority situated in major metropolitan areas.

--in terms of research involvement, four received under $2 million in obligations for research activities from HEW agencies in fiscal 1970. Another five fall within the $2-4 million interval for research support. One participant received about $7 million in HEW research support funds in 1970, and another approximated $10 million.

--as a group, the participants are relatively active with regard to HEW and OEO community service projects. Three are classified as having primary involvement in more than one such project, and another three are occupied with a single project. Every one of the eleven participants has at least secondary involvement in a community service program.

--three participants had, based on the latest available data, minority medical student enrollment of about 4% of the total medical student body. The remainder range downward to a low of 0.6%.

--using 500 beds as a benchmark for the capacity of a teaching hospital, the hospitals owned by the various participants tend to be relatively small. In at least two instances, on the other hand, the affiliated hospitals have more than 800 beds.

--all the participants were recipients of NIH project grant awards based on relative financial need or financial distress during fiscal 1970, and every one is still a project grant recipient.

--three of the medical schools acknowledged accreditation difficulties in their applications for NIH support.

--in eight instances, review of the project grant material on file with NIH identified either no specific reason or gave inflation and inadequate external support as the causes of financial difficulty. Both of the relatively large research-oriented schools noted loss of Federal grant support and cost overruns on construction projects as causes for their present status. Another school referred to deficits in the operation of the teaching hospital.

--among this group of eleven schools, there was either no indication in the grant file as to expected duration of financial difficulty or expectation of an indefinite problem in ten cases. One school expected the financial distress to last four or five years.

--one school had imposed a freeze on hiring, another had overhauled its administrative structure, two others either have or are now implementing improved professional service plans, one had shifted the predominant effort of a limited number of faculty from research to teaching, and a sixth had recently secured State financial support. There was no indication in the grant files of management actions undertaken or planned in the remaining five schools.

--none of the participants had previously done a cost study of this scope and complexity, although faculty effort reporting and detailed cost finding studies for Medicare reimbursement purposes had previously been undertaken in some instances.

Functional Distributions and Unit Costs in Medical School Basic Science Departments

Analysis of basic science department direct costs in the aggregate was possible in six of the eleven cost allocation studies. The remaining study reports treated non-faculty salary components of sponsored research and research training as a line item, rather than associating these costs with individual basic science and clinical departments.

"Basic science departments" as used herein refers to anatomy, biochemistry, microbiology, pathology, physiology, and pharmacology. Recognizing school-by-school variations in departmental structure, an attempt has been made, within the constraints imposed by limitations of data in the study reports, to obtain comparability among the six reports selected for analysis.

Since the study format only requested departmental breakdowns for direct costs, the figures below exclude the effect of indirect costs such as operation and maintenance of plant, library operations, and general and administrative expenses (e.g., Dean's office, Medical center administration, etc.).

On this and subsequent tables, the institutions whose cost allocation studies are being utilized have been assigned to one of three classifications based on study coverage of the teaching hospital(s). That is, two study participants captured only cost and income within the medical school and the education-related components of the teaching hospital(s). Purely patient service costs and income of the hospital(s) were excluded in these two instances. The other study reports reflect total cost and income for the medical school, other health and allied health professions schools where applicable, and the teaching hospital(s).

To safeguard confidentiality, medical student enrollments are consistently reflected as within a range of 50 rather than as a finite number.

Instructional unit costs are arrayed for undergraduate medical students; students seeking an M.S. or Ph.D. degree and persons with an M.D. or Ph.D. obtaining advanced training; and interns and residents.

Total Direct Cost (In Thousands)	Percentage Allocation of Cost by Function			Medical Student Enrollment	Instructional Unit Cost		
	Instruction	Research	Patient Service		Undergraduate M.D.	Graduate and Post-doctoral	House Staff
Partial coverage of affiliated hospital(s)							
$3,117	34.0%	40.0%	26.0%	300-350	$3,060	$4,921	$432
3,591	28.8	69.6	1.6	350-400	645	3,104	23
Complete coverage of affiliated hospital(s)							
2,166	22.4	73.0	4.6	300-350	963	4,045	300
2,628	49.2	43.0	7.8	400-450	1,383	4,481	554
Complete coverage of own hospital							
1,813	38.9	50.1	11.0	250-300	1,157	1,449	641
1,350	50.7	31.5	17.8	350-400	956	1,793	560

--conduct of research represents the greatest proportion of total direct cost in four of the six schools arrayed. If graduate and postdoctoral instruction is combined with research, the resultant category is easily the largest percentage of total direct cost in all six institutions.

--more detailed analysis of the instruction category shown on the foregoing table indicates that the portion of total direct cost attributable to undergraduate medical student instruction varies from 6.5% to 29.7%.

--the institution with the largest dollar volume of research shows the lowest percentage of total direct cost and the lowest unit cost for the M.D. instruction function. This is also the only one of the schools displayed which employed a core curriculum in the undergraduate medical education program.

--the school with the greatest proportion of cost in patient service has a pathology department of such abnormal size, in relation to the other basic science departments and to the total institution, as to distort percentage cost allocations and unit costs.

Unit Cost Comparisons

Once again, it should be understood that unit cost for "instruction" is not synonomous with a unit cost for medical "education." The extent and cost of exposure to research and patient service required for educational purposes has yet to be quantified.

Beginning with this table, the institutions whose cost allocation studies are being displayed have each been assigned a code letter. The eleven institutions will be similarly identified and arrayed in this same sequence on all succeeding analyses.

Unlike the prior table, the unit costs reflected below have been derived by dividing total operating costs, both direct and indirect, for each instructional category by the number of students or trainees in that particular category. Using institution "C" as an example, the unit instructional cost in the medical school for undergraduate medical students was $6,112 during fiscal year 1970. Inclusion of the teaching hospital and its attendant costs of senior residents, nursing personnel, administrative staff, etc., related to medical student instruction adds another $905 to the unit cost. The total unit cost incurred within the health science center--both medical school and teaching hospital--for instructing an undergraduate medical student was, therefore, $7,017. Moving to house staff (i.e., intern and resident) instructional costs in this same institution, here again the $2,938 unit cost figure for the medical school alone is incorporated within and is not added to the $7,990 cost incurred by the health science center for "instructing" each house officer during this particular fiscal year.

Institution	Medical Student Enrollment	Undergraduate M.D. Instruction: Medical School	Undergraduate M.D. Instruction: Health Science Center	House Staff Instruction: Medical School	House Staff Instruction: Health Science Center	Graduat toral: Medica Hea
Partial coverage of affiliated hospital(s)						
A	300-350	Not available (NA)	$10,790	NA	$6,947	
B	350-400	NA	7,350	NA	6,655	
Complete coverage of affiliated hospital(s)						
C	300-350	$6,112	7,017	$ 2,938	7,990	
D	400-450	5,200	5,520	10,433	14,601	
E	450-500	3,192	4,551	3,717	7,630	
Complete coverage of own hospital						
F	200-250	5,318	5,592	6,856	8,116	
G	250-300	3,959	3,959	10,432	10,432	
H	350-400	4,149	4,529	11,323	13,418	
I	450-500	3,651	3,988	8,548	8,548	
J	450-500	NA	4,247	NA	10,100	
K	500-550	7,893	7,893	--	30,452	
Weighted averages						
a) Institutional coverage		"C" - "K"	"A" - "K"	"C" - "K"	"A" - "K"	
b) unit cost		$5,659	$5,831	$6,465	$10,879	

Medical Student Enrollment	Undergraduate M.D. Instruction: Medical School	Undergraduate M.D. Instruction: Health Science Center	House Staff Instruction: Medical School	House Staff Instruction: Health Science Center	Graduate & Postdoctoral Instruction: Medical School and Health Center
ge of affiliated hospital(s)					
300-350	Not available (NA)	$10,790	NA	$6,947	$6,463
350-400	NA	7,350	NA	6,655	7,587
rage of affiliated hospital(s)					
300-350	$6,112	7,017	$ 2,938	7,990	12,978
400-450	5,200	5,520	10,433	14,601	9,485
450-500	3,192	4,551	3,717	7,630	16,873
rage of own hospital					
200-250	5,318	5,592	6,856	8,116	12,606
250-300	3,959	3,959	10,432	10,432	2,804
350-400	4,149	4,529	11,523	13,418	6,186
450-500	3,651	3,988	8,54[illegible]	8,548	6,370
450-500	NA	4,247	NA	10,100	5,413
500-550	7,893	7,893	--	30,452	5,480
gge					
tional coverage	"C" - "K"	"A" - "K"	"C" - "K"	"A" - "K"	"A" - "K"
ost	$5,659	$5,831	$6,465	$10,879	$7,207

--in computing unit costs, no adjustment has been made for the value of donated services by volunteer faculty. The several studies followed no consistent approach as to (a) coverage of volunteer faculty, (b) the value of volunteers in the educational program, or (c) expression of a replacement cost in quantified terms.

--except for institution "H", the instructional unit costs for graduate and postdoctoral students were the same at the medical school and health science center levels. In this one instance, an additional cost of $151 per student was incurred when elements beyond the medical school were incorporated.

--the weighted average unit cost of $7,207 for graduate and postdoctoral instruction is the figure computed at the level of the health science center.

--considerably greater variation exists among the eleven study institutions in terms of numbers of house staff and graduate and postdoctoral students than is true in the area of medical student enrollment. House staff varies from between 50 and 100 in three cases to well over 500 in one institution. Graduate and postdoctoral students show an even greater range, from 50 or less in four instances to close to 350 for one study participant.

--there is no particular correlation between size of student body and instructional unit cost in either the house staff or graduate and postdoctoral categories. For example, institutions "G," "H," and "I" all have more than 100 graduate and postdoctoral students, and differ from one another in this particular area by a range of only 14 students. Yet, the respective unit costs are $2,804, $6,186 and $6,370. "C" and "J," to cite another illustration, are only 21 apart in the number of house staff but have instructional unit costs of $7,990 and $10,100, respectively.

Are the unit cost figures abnormally low since they come from analysis of institutions in financial difficulty?

Conceivably, instructional unit costs derived from analyses of eleven institutions who are all recipients of NIH special project grants based on relative financial need or financial distress may be on the low side as compared to costs incurred in institutions in better financial condition.

This, however, can only be tested through cost analysis in a broader range of institutions.

Although admittedly fragmentary, data available from the full eighteen cost allocation studies does not suggest a gross "underestimate." Two of the eighteen institutions are not currently recipients of NIH financial need/financial distress awards, nor were they recipients of such awards during the study period.

In one instance, the cost allocation study report was not utilized in the various analyses since it lacked coverage of at least the education-related components of the primary teaching hospital. While the medical school income displays in this particular report also require further scrutiny, the allocations of cost by functional category seem acceptable. The medical school unit cost for instruction of undergraduate medical students is shown as $6,693 for the fiscal year ending June 30, 1970.

The second cost allocation report is from an institution which utilized final accounting data for certain tabular displays, and preliminary information for the remainder of the document. The computation of unit cost happens to be that segment reflecting the final accounting reports. For instruction of undergraduate medical students the unit cost at the level of the "health science center" is computed at $6,369.

As will be noted by comparison with the unit costs shown on the foregoing table, the two figures cited above are not strikingly dissimilar from unit costs for instruction of undergraduate medical students calculated among the eleven study institutions.

Allocation of Costs by Functional Category

Shown below are the distributions of total operating costs by functional category, first for the medical school and then for the health science center, including the teaching hospital.

The Seven Center Pilot Study data reflected in the upper part of the analysis covers the fiscal year ending June 30, 1967. Besides instruction, research and patient service, a residual category--"other programs"--was utilized in this particular study. This latter category has been excluded for purposes of the present analysis, and consequently the sum of the weighted averages for the Seven Center study data is somewhat less than 100%.

"Financial distress study" refers to the eleven cost allocation reports encompassing fiscal year 1970.

"Low" and "High" as used herein have been determined on an individual functional category and sub-category basis and do not, therefore, add up to 100%.

The three sub-categories reflected under "Instruction" are simply breakouts from the latter figure, and thus are shown in brackets. These three sub-categories, moreover, do not equate to 100% of instructional costs. The differential is represented by continuing education and other instructional programs.

	Medical School			Health Science Center		
	Low	Weighted Avg.	High	Low	Weighted Avg.	High
Seven Center Pilot Study						
Instruction	25.6%	32.1%	54.3%	14.8%	19.8%	28.1%
Undergraduate M.D.	(6.7)	(10.0)	(31.7)	(4.0)	(5.8)	(14.1)
Graduate, postgraduate, and postdoctoral	(8.0)	(10.5)	(12.1)	(3.3)	(5.5)	(6.9)
Intern and resident	(5.8)	(8.0)	(15.4)	(3.3)	(5.2)	(8.3)
Research	26.4	45.4	55.3	11.5	24.8	31.6
Patient Service	12.5	20.8	32.3	42.6	53.1	61.5
Financial Distress Study						
Instruction	30.0	37.9	48.9	14.2	22.4	33.0
Undergraduate M.D.	(13.6)	(18.2)	(27.3)	(5.8)	(8.5)	(11.4)
Graduate and postdoctoral	(1.8)	(5.6)	(8.7)	(.6)	(3.0)	(5.5)
Intern and resident	(0)	(9.3)	(15.6)	(3.9)	(6.1)	(8.7)
Research	24.9	41.2	56.6	8.9	20.3	26.5
Patient Service	13.4	20.9	31.2	48.2	57.3	70.8

Allocation of Income by Source

Here again, medical school data is both identified separately and incorporated with that of other organizational components to create a display for the total health science center. Reflecting the internal structure of the eleven cost allocation study reports, this particular analysis is based on information from seven institutions at the "medical school" level and eight institutions at the level of the "health science center."

"Low"and "High" represent institution-by-institution comparisons by individual category and, therefore, do not add up to 100%.

"Grants and contracts for instruction, research, and community service" reflect both direct support and indirect cost allowances from Federal and State agencies, private enterprise, foundations, and voluntary health organizations. The Federal Government is the predominant source of these funds.

	Medical School			Health Science Center		
	Low	Weighted Avg.	High	Low	Weighted Avg.	High
Tuition and fees	1.7%	8.6%	13.1%	1.9%	3.6%	8.8%
Grants and contracts for instruction, research, & community service	33.7%	55.2	80.6	15.9	25.3	43.4
Professional service program	--	6.9	14.5	0.6	5.6	14.0
Service contracts--hospital contributions	--	9.1	26.5	--	9.6	51.3
State appropriations	--	16.0	50.6	--	14.2	45.1
Gifts, endowment earnings, and investment income	--	2.8	4.9	--	3.1	15.5
Patient fees	--	--	--	NA	36.9	67.6
Other	--	1.4	3.4	--	1.7	4.5
	*	100.0%	*	*	100.0%	*

Comparison of Cost and Income for the "Undergraduate M.D. Instruction" Sub-category

This is the initial display of the results of comparing cost and income as reported by the institutions in their respective allocation studies. Rather than showing cost and/or income data, the focus is on the "surplus" or "deficit" derived from the comparison.

Taking institution "A" on the following table as an example, cost and income data by functional category is only available at the health science center level. That is, it is impossible to derive from this particular study report functional cost and income data for the medical school, exclusive of the teaching hospital. Institution "A" initially allocated all restricted purpose income, calculated the "deficit" by functional category, and then applied a large item of unrestricted income so as to offset the individual "deficits." Column number 2 shows the magnitude of the unrestricted income item--in this instance $4,538,000.

In an attempt to illuminate the areas of fiscal difficulty, wherever an institution allocated a large item of unrestricted income (e.g., a State appropriation) in this fashion, the cost-income comparisons are shown both before and after. The designation "No" in column 1 means that in reading across the table from left to right, the cost-income comparison has been drawn before application of the unrestricted income item. "Yes" means that all income, unrestricted as well as restricted, as allocated by the institution has been reflected in computing cost-income comparisons.

Returning to institution "A," before application of the approximately $4.5 million income item, the deficit in undergraduate medical student instruction was $964,000. Here and in each of the following tabular entries of the results of comparing cost and income, the NIH special project grant award based on relative financial need or financial distress has been included as income. To put it another way, in the absence--in the case of institution "A"--of the $571,000 NIH award (column 5), the medical student instructional deficit at this stage would have been $1,535,000. With the inclusion of all income received during fiscal 1970, institution "A" shows income exactly matching cost for the undergraduate medical instruction sub-category and (column 4) for the entire health science center.

By and large, the eleven study institutions applied the income from their NIH special project grant against costs of undergraduate medical student instruction.

Again for purposes of illustration, institution "B" allocated a large item of unrestricted income--$2,874,000--in a manner to offset deficits by functional category and sub-category. Excluding these funds from the cost-income comparison, the undergraduate medical instruction function would show a $9,000 deficit. This deficit would be considerably larger were it not for the $335,000 special project grant award. By the same token, however, institution "B" has chosen to allocate virtually all of its unrestricted income to a functional area other than medical student instruction. At institution "F," the medical school and the medical school-teaching hospital combination (i.e., health science center) operated at deficits of $431,000 and $1,075,000, respectively, in fiscal 1970 (column 4). The undergraduate medical student instruction function, if viewed in isolation, would have shown a "surplus" even in the absence of the $400,000 NIH special project grant award.

(Dollars in Thousands)

Institution	(1) Unrestricted Income Allocated to Offset Deficits by Function?	(2) Amount of Unrestricted Income Referred to in Column 1	(3) (Deficit)/Surplus in Undergraduate M.D. Instruction	(4) (Deficit)/Surplus for Entire Organizational Entity	Fi Au In 3
A Health Science Center	No		$(964)	$ *	
	Yes	$4,538	--	--	
B Science Center	No		(9)	*	
	Yes	2,874	--	--	
C Medical School	No		414	78	
Science Center	No		134	860	
D Medical School	No		5	*	
	Yes	1,500	Not available (NA)	--	
Science Center	No		NA	(315)	
E Medical School	No		1,036	(352)	
Science Center	No		NA	(90)	
F Medical School	No		887	(431)	
Science Center	No		821	(1,075)	
G Medical School	No		(518)	*	
	Yes	3,614	--	--	
Science Center	No		(518)	*	
	Yes	5,400	--	--	
H Medical School	No		(295)	*	
	Yes	3,836	--	--	
Science Center	No		(444)	*	
	Yes	7,039	--	--	

(Dollars in Thousands)

) d Income o Offset Function?	(2) Amount of Unrestricted Income Referred to in Column 1	(3) (Deficit)/Surplus in Undergraduate M.D. Instruction	(4) (Deficit)/Surplus for Entire Organizational Entity	(5) Financial Need Award Included as Income in Columns 3 and 4
		$(964)	$ *	$571
	$4,538	--	--	
		(9)	*	335
	2,874	--	--	
		414	78	324
		134	860	
		5	*	400
	1,500	Not available (NA)	--	
		NA	(315)	
		1,036	(352)	600
		NA	(90)	
		887	(431)	400
		821	(1,075)	
		(518)	*	275
	3,614	--	--	
		(518)	*	
	5,400	--	--	
		(295)	*	699
	3,836	--	--	
		(444)	*	
	7,039	--	--	

Institution	(1) Unrestricted Income Allocated to Offset Deficits by Function?	(2) Amount of Unrestricted Income Referred to in Column 1	(3) (Deficit)/Surplus in Undergraduate M.D. Instruction	(4) (Deficit)/Surplus for Entire Organizational Entity	(Financ Award Income 3 and
I Medical School	No		458	(562)	
Science Center	No		295	(1,267)	
J Science Center	No		(1,052)	*	
	Yes		(154)	238	
K Science Center	No		(1,514)	(2,965)	

	(1) Unrestricted Income Allocated to Offset Deficits by Function?	(2) Amount of Unrestricted Income Referred to in Column 1	(3) (Deficit)/Surplus in Undergraduate M.D. Instruction	(4) (Deficit)/Surplus for Entire Organizational Entity	(5) Financial Need Award Included as Income in Columns 3 and 4
l	No		458	(562)	395
r	No		295	(1,267)	
r	No		(1,052)	*	165
	Yes		(154)	238	
r	No		(1,514)	(2,965)	351

What has been suggested thus far?

--in general, the "instruction" functional category represents a minority of the costs incurred in operation of the medical schools depicted on the foregoing tables

--at the level of the health science center, "instruction" plays an even smaller role proportionally, with patient service programs replacing research as the largest cost center

--there is no clear indication of economy of scale when comparing the size of undergraduate medical student enrollment with the unit cost of "M.D. instruction," whether said cost is computed at the level of basic science departments in the aggregate, the medical school, or the health science center

--even adjusting for differences in student body size and study coverage of the teaching hospital, there are wide variations among the eleven institutions with regard to unit costs for graduate and postdoctoral and house staff instruction

--where the cost allocation study encompasses complete coverage of the teaching hospital, the unit cost of house staff instruction is the most expensive instructional endeavor displayed for health science centers in a clear majority of cases and by relatively substantial amounts

--after adjusting to eliminate large items of unrestricted income such as State appropriations which have been allocated in a manner to simply cancel out functional deficits, the severity of financial difficulty directly related to "undergraduate M.D. instruction" is at least open to question

--this should not be construed as challenging the right of an institution to distribute unrestricted income among its multiple cost centers in any manner which the institution deems desirable. By the same token, however, the Federal Government has an obligation to examine this distribution and all of its attendant ramifications when the institution seeks project grant support for the alleviation of financial difficulties encountered or anticipated in day-to-day operations

--there are indications that NIH financial need/financial distress awards were utilized to a sizable degree for maintenance of the "educational environment" rather than the "M.D. instruction" function

--this latter hypothesis can be further tested through analysis of more comprehensive cost and income data, initially utilizing the functional definitions employed in the cost allocation studies

Comparison of Cost and Income by Functional Area--Definitions as Utilized in the Cost Studies

The sample effort report form displayed earlier identifies the functional categories and sub-categories employed by institutions participating in the cost allocation studies. As used on the following table, therefore, "Instruction" encompasses instructional activities related to undergraduate medical students, graduate and postdoctoral students, house staff, continuing education programs, and to the extent applicable in each individual institution, dental, nursing, and other health and allied health professio students. "Instruction" is the entire instructional activity of the health science center, as that organizational entity has been defined for purposes of the cost study.

"Research" represents two elements on the faculty effort report form--conduct of research and advisory services to granting agencies. No distinction is made between sponsored and non-sponsored research. Rather, the entire research function is the basis for the comparison of cost and income.

The final functional category--"Patient service"--consists of community and public health services and patient services, as those terms are used on the faculty effort report form.

To reiterate several points made earlier:

--all data being displayed has been derived, without substantive modification, from the respective cost allocation study reports;
--the NIH special project grant awards based on relative financial need or financial distress are included as an income item in the cost-income comparisons;
--to better illustrate the areas of specific fiscal difficulty, where large items of unrestricted income have been allocated so as to offset deficits by functional category, the cost-income comparisons are displayed both before and after distribution of this income; and
--all data refers to the single fiscal year ending June 30, 1970.

Turning to a specific example at institution "G" the total cost incurred by the medical school in fiscal 1970 was $7,141,000. Inclusion of the teaching hospital and other components of the overall health science center raised total cost to $17,629,000. As indicated by the column labeled, "Composite cost-income variation," income exactly matched cost at both the medical school and health science center levels.

Before consideration of a large item of unrestricted income which was distributed in the cost allocation study so as to offset deficits by functional area, costs incurred by major functional category have been compared with, in essence, restricted purpose income. The result is a deficit in the medical school of $1,616,000 in instruction, $454,000 in research, and $1,544,000 in patient services. According "instruction" is the functional area with the largest deficit. Both the overall deficit and the deficits by functional area evaporate when unrestricted income is considered in the comparison.

Although the specific numbers change, essentially the same situation prevails within the total health science center. That is, before application of unrestricted income, institution "G" shows deficits of $2,649,000 in instruction, $603,000 in research, and $2,148,000 in patient service.

Following up on the earlier comparison of cost and income for the "undergraduate M.D. instruction" sub-category, when viewed in the aggregate, institution "B" shows a sizable deficit--$2,794,000--in the research area. Institution "F," on the other hand, has its greatest financial problems in the area of patient service.

It is difficult to conclude that the deficits by functional category reflected on the following table reflect explicit decisions of health science center management. Even where, for example, it was recognized beforehand that a deficit would be incurred in research, the lack of an institution-wide picture comparable to that provided by the cost allocation studies could have caused gross underestima of the potential magnitude.

The stimulus to institutional self-study is perhaps the prime attribute of a cost allocation study. The study itself provides little in the way of solutions to fundamental financial problems. On the other hand, it does furnish a basis, however crude at this stage of methodological development, for searching analysis.

Simply to illustrate the point, institutions "A," "G," "H," and "J" all had authority during fiscal year 1970 to allocate large items of unrestricted income in a flexible manner. Theoretically at least, they need not have reflected in their respective cost studies substantial deficits in the "Instruction" category. What circumstances, for example, caused health science center "J" to so skew the allocation of unrestricted income as to produce a deficit in "Instruction" and either a surplus or parity between cost and income in the other main functional areas? Even more importantly, what are the opportunities for modifying functional costs, income generated, and/or the distribution of income?

TABLE 3

Comparison of Cost and Income by Functional Area-Definitions as Utili

(Dollars in Thousands)

Institution	Organizational entity/ total cost	Unrestricted income allocated to offset deficits by function?	Financial need/distress award	Cost-Income Variation by Func Instruction	Research	Patie
Partial coverage of affiliated hospital(s)						
A	Health Science Center/$8,848	No	$571	$(1,674)	$(1,066)	
		Yes		--	--	
B	Science Center/26,435	No	335	(144)	(2,794)	
		Yes		--	--	
Complete coverage of affiliated hospital(s)						
C	Medical School/10,422	No	324	(79)	(535)	
	Science Center/33,728	No		(2,134)	(635)	
D	Medical School/12,497	No	400	(623)	(1,292)	
		Yes		--	--	
	Science Center/35,227	No		NA	NA	
E	Medical School/11,047	No	600	263	816	
	Science Center/37,045	No		NA	NA	
Complete coverage of own hospital						
F	Medical School/4,907	No	400	181	(302)	
	Science Center/13,758	No		(178)	(310)	
G	Medical School/7,141	No	275	(1,616)	(454)	
		Yes		--	--	
	Science Center/17,629	No		(2,649)	(603)	
		Yes		--	--	
H	Medical School/9,198	No	699	(1,929)	(593)	
		Yes		--	--	
	Science Center/15,602	No		(2,612)	(845)	
		Yes		--	--	
I	Medical School/10,488	No	395	(159)	(462)	
	Science Center/20,886	No		(749)	(691)	

TABLE 3

rison of Cost and Income by Functional Area-Definitions as Utilized in the Cost Studies

(Dollars in Thousands)

estricted income located to offset ficits by function?	Financial need/distress award	Cost-Income Variation by Functional Area Instruction	Research	Patient Service	Function with greatest deficit	Composite cost-income variation
No	$571	$(1,674)	$(1,066)	$(1,798)	Patient service	$ *
Yes		--	--	--	**	--
No	335	(144)	(2,794)	64	Research	*
Yes		--	--	--	**	--
No	324	(79)	(535)	592	Research	78
No		(2,134)	(635)	3,629	Instruction	860
No	400	(623)	(1,292)	414	Research	*
Yes		--	--	--	**	--
No		NA	NA	NA	NA	(315)
No	600	263	816	(1,431)	Patient Service	(352)
No		NA	NA	NA	NA	(90)
No	400	181	(302)	(310)	Patient service	(431)
No		(178)	(310)	(588)	Patient service	(1,075)
No	275	(1,616)	(454)	(1,544)	Instruction	*
Yes		--	--	--	**	--
No		(2,649)	(603)	(2,148)	Instruction	*
Yes		--	--	--	**	--
No	699	(1,929)	(593)	(1,315)	Instruction	*
Yes		--	--	--	**	--
No		(2,612)	(845)	(3,583)	Patient service	*
Yes		--	--	--	**	--
No	395	(159)	(462)	60	Research	(562)
No		(749)	(691)	174	Instruction	(1,267)

Institution	Organizational entity/ total cost	Unrestricted income allocated to offset deficits by function?	Financial need/distress award	Cost-Income Variation by Instruction	Research
J	Science Center/34,268	No	165	(5,621)	(1,807)
		Yes		(748)	--
K	Science Center/48,195	No	351	(1,762)	(3,242)

lcted income ed to offset s by function?	Financial need/distress award	Cost-Income Variation by Functior Instruction	Research	Patient S	1 Area rvice	Function with greatest deficit	Compos ite cost- ncome varia ion
No	165	(5,621)	(1,807)	(1,057)		Instruction	*
Yes		(748)	--	985		Instruction	2 3
No	351	(1,762)	(3,242)	2,039		Research	(2,9 5)

Comparison of Cost and Income by Functional Area--Redefinition of "Research" and "Patient Services"

As indicated earlier, a hypothesis has been established that in a number of instances among the group c eleven institutions, NIH financial need/financial distress awards were being utilized to a sizable degree during fiscal year 1970 for maintenance of the "educational environment" rather than for the "undergraduate M.D. instruction" function.

To gain another perspective from which to examine this issue, the major functional categories have bee redefined from the definitions employed in the cost studies. More specifically, the sub-categories "graduate and postdoctoral instruction" have been associated with "research," and "house staff instruction" has been combined with "patient services."

The rationale for this action is two-fold:

--faculty encounter greater difficulty in separating these closely related endeavors for purposes of completing the effort report form than any other multipurpose activities; and

--the predominant source of funding for graduate and postdoctoral training is from the research area, and the primary source of funds for house staff instruction is through patient service programs such as Medicare.

As used on the following table, "Instruction" is defined as being restricted to undergraduate medical students, other health professions students, nurses and allied health personnel, and continuing education programs. Hence the column heading "Instruction of M.D. students and related personnel."

None of the data reported in the individual cost allocation studies has been revised. It has simply been rearrayed based on the method of treating costs and income associated with graduate and postdoctoral and house staff instruction.

In other principal respects, interpretation of the data display is identical to the tables presented earlier.

As will be noted by comparing the cost-income variations by functional area with the preceding table, the most dramatic reflection of the revised definitions is caused by the shift of house staff instruction costs and income. This is especially noticeable in institutions "A," "C," "F," "G," "H," and "J." Taking "H" as an example, at the level of the health science center and before application of unrestricted income allocated to offset functional deficits, "Patient service " showed a "loss" of $3,583,000 on Table 3. This has now increased to $4,726,000 on the following table.

TABLE 4

Comparison of Cost and Income by Functional Area--Redefinition of "Research" a

(Dollars in Thousands)

Institution	Organizational entity/ total cost	Unrestricted income allocated to offset deficits by function?	Financial need/distress award	Cost-Income Variation by Fun Instruction of M.D. students and related personnel	Graduate instruction and conduct of research
Partial coverage of affiliated hospital(s)					
A	Health Science Center/$8,848	No	$571	$(973)	$(1,156)
		Yes		--	--
B	Science Center/26,435	No	335	(346)	(2,903)
		Yes		--	--
Complete coverage of affiliated hospital(s)					
C	Medical School/10,442	No	324	150	(627)
	Science Center/33,728	No		(797)	(728)
D	Medical School/12,497	No	400	(266)	(1,649)
		Yes		--	--
	Science Center/35,227	No		NA	NA
E	Medical School/11,047	No	600	613	726
	Science Center/37,045	No		NA	NA
Complete coverage of own hospital					
F	Medical School/4,907	No	400	751	(383)
	Science Center/13,758	No		488	(391)
G	Medical School/7,141	No	275	(715)	(606)
		Yes		--	--
	Science Center/17,629	No		(1,680)	(789)
		Yes		--	--
H	Medical School/9,198	No	599	(916)	(594)
		Yes		--	--
	Science Center/15,602	No		(1,451)	(862)
		Yes		--	--

TABLE 4

nd Income by Functional Area--Redefinition of "Research" and "Patient Services"

(Dollars in Thousands)

cted ncome d to offset by function?	Financial need/distress award	Cost-Income Variation by Functional Area			Function with greatest deficit	Composite cost-income variation
		Instruction of M.D. students and related personnel	Graduate instruction and conduct of research	House staff instruction and patient service		
No	$571	$(973)	$(1,156)	$(2,409)	atient service	$ *
Yes		--	--	--	**	--
No	335	(346)	(2,903)	375	esearch	*
Yes		--	--	--	**	--
No	324	150	(627)	554	esearch	78
No		(797)	(728)	2,385	.D. Instruction	860
No	400	(266)	(1,649)	414	esearch	*
Yes		--	--	--	**	--
No		NA	NA	NA	NA	(315)
No	600	613	726	(1,691)	Patient service	(352)
No		NA	NA	NA	NA	(90)
No	400	751	(383)	(799)	Patient service	(431)
No		488	(391)	(1,172)	Patient service	(1,075)
No	275	(715)	(606)	(2,293)	Patient service	*
Yes		--	--	--	**	--
No		(1,680)	(789)	(2,931)	Patient service	*
Yes		--	--	--	**	--
No	599	(916)	(594)	(2,326)	Patient service	*
Yes		--	--	--	**	--
No		(1,451)	(862)	(4,726)	Patient service	*
Yes		--	--	--	**	--

Institution	Organizational entity/ total cost	Unrestricted income allocated to offset deficits by function?	Financial need/distress award	Cost-Income Variation by Func	
				Instruction of M.D. students and related personnel	Graduate instruction and conduct of research
I	Medical School/10,488	No	395	440	(936)
	Science Center/20,886	No		(163)	(961)
J	Science Center/34,268	No	165	(2,837)	(2,739)
				(347)	(134)
K	Science Center/48,195	No	351	(1,562)	(3,360)

ted income to offset by function?	Financial need/distress award	Cost-Income Variation by Functional Area			Function with greatest deficit	Composite cost-income variation
		Instruction of M.D. students and related personnel	Graduate instruction and conduct of research	House staff instruction and patient service		
o	395	440	(936)	(65)	Research	(562)
o		(163)	(961)	(143)	Research	(1,267)
o	165	(2,837)	(2,739)	(2,910)	Patient Service	*
		(347)	(134)	718	M.D. instruction	238
o	351	(1,562)	(3,360)	1,957	Research	(2,965)

What do the two alternate methods of cost-income comparison show?

--using the functional definitions employed in the cost allocation studies (Table 3), all eleven participants would reflect a fiscal 1970 "deficit" in the instructional category (total instruction and not just undergraduate medical student instruction) if the NIH financial need/financial distress project grants had not been available. This, of course, assumes maintenance of other aspects of health science center operations as they were actually carried out in 1970.

--again using the functional definitions of the studies, "Instruction" is identified as the area of largest dollar deficit in 7 out of the 17 instances at the medical school and/or health science center level where cost-income comparisons are possible (Table 3).

--conversely, employing revised definitions which shift the locus of costs and income for graduate, postdoctoral and house staff instruction (Table 4), the residual "Instruction" category becomes the area of greatest dollar deficit in only 2 out of 17 instances where a cost-income comparison is possible.

--if NIH special project grant awards are not counted as income in the cost-income comparisons, "Instruction" is the greatest deficit area in 9 of 17 instances employing the functional definitions of the cost allocation studies. This changes to only 3 of 17 based on the revised functional definitions used for Table 4.

--comparison of costs and income for the "Instruction of M.D. students and related personnel" category produces a surplus in certain cases (Table 4). At the level of the medical school, institutions "C," "E," "F," and "I" reflect surpluses ranging from $150,000 to $751,000. When the teaching hospital and any other components of the total health science center are added, however, the number of instances of a "surplus" drops to one or two (i.e., "F" and perhaps "E").

--continuing further with the foregoing analysis, if income from NIH special project grant awards were then disregarded, three institutions (i.e., "E," "F," and "I") would still retain a "surplus" ranging from $13,000 to $351,000 in the medical school component of "Instruction of M.D. students and related personnel." From the perspective of the health science center, "F" and perhaps "E" would also retain a surplus of income over cost incurred for this particular functional category in fiscal 1970.

What do the cost allocation studies reflect with regard to dental education?

--only two dental schools are incorporated in the 11 (or 18) cost studies

--one is a State institution and the other privately operated

--clearly this is an inadequate sample for purposes of generalization

--moreover, the two schools were not treated on a comparable basis in the respective cost studies. In one instance, the dental clinics were identified as separate cost centers and have subsequently been treated entirely as an "instructional" cost. Clinical costs, which are relatively substantial, were arbitrarily divided between "instruction" and "patient service" in the second study

--both schools secure basic science instruction necessary for dental education from related medical schools. This is certainly one factor in the comparative paucity of research costs. Research ranges from 11.0% to 15.9% of total operating cost, well below the low of 24.9% in the group of eleven medical schools described earlier

--undergraduate dental instruction represents 43.3% and 54.3% of the respective total costs, considerably above the high of 27.3% recorded for undergraduate medical student instruction

--here again, however, there is a serious problem of comparability since the percentages cited for "DDS instruction" incorporate much or all of the exposure to patient service necessary for educational purposes. That is, the dental clinic costs are the service component of undergraduate dental education

--the "7-Center Pilot Study" encompassed three dental schools. Using weighted averages to compensate for variations in total operational costs, analysis indicates that 58% of the costs incurred by this group of schools were attributable to undergraduate DDS instruction and 14.6% were attributable to research. Thus, the latest two dental school studies are roughly comparable to the previous three in the allocation of costs

--allocating all clinic costs in one school as an educational expense produces an "undergraduate DDS instruction" unit cost of $5,346. The school which arbitrarily split clinic costs between "instruction" and "service" has a $3,359 unit cost for the same category

--a comparison of cost and income by major functional category is inconclusive at best

Footnote

1/ Thomas J. Campbell, Program Cost Allocation in Seven Medical Centers: A Pilot Study (Evanston, Illinois: Association of American Medical Colleges, 1969), p. 7.

The Cost of Medical/Dental Education

As emphasized earlier, the cost allocation studies identify instruction (i.e., student counseling, facul preparation time, and student contact) rather than education as a cost center or category. Closing this gap requires isolation of those costs of research and patient service necessary for or applicable to the educational process.

Congressional testimony of the Chairman of the Executive Council, Association of American Medical Colleg expresses one approach to computing the unit cost of educating a medical student.

> Since 1967 the Association, in cooperation with the HEW Department, has been engaged in a series of studies to develop an effective methodology for cost allocation among the many and complex functions and programs of academic health centers. Substantial progress has been made in this effort, and we believe we do have a sound method of measuring functional costs. We have a fair ways to go before we can provide valid data on end-purpose program costs which can be used with confidence and without major qualifications. Based on the overall reporting of medical school expenditures, it is estimated that the mean cost of the elements of programs of educating a medical student ranges upward from $15,000 to $25,000 per student per year.[1/]

Likewise, the Annual Survey of Dental Educational Institutions divides the total expenditures of dental schools by the number of undergraduate dental students to arrive at an approximate unit cost per student of $8,480 for fiscal year 1969. The Survey report characterizes this figure as "the most realistic and valid data yet available on the cost of education per dental student" while acknowledging that it "does not take into account the variations which exist among dental schools in terms of the number of students enrolled in advanced education, dental auxiliary programs, and continuing education programs."[2/]

Carroll and Darley have cited several common misuses of cost data, including:

(1) Computing a unit cost by dividing the number of undergraduate medical students into expenditures from funds for regular operating programs -- the basic derivation of the $15,000 figure used by the AMC. "This unit cost . . . is inaccurate because it includes expenditures for educating students other than those seeking the M.D. degree plus expenditures for research and services essential to the total body of students." (Emphasis supplied.)

(2) Treating total school expenditures as the cost of educating M.D. (or, for that matter, dental) students. "This figure should not be used . . . because it is improper to charge this one program with the costs of all others." [3/] (Emphasis supplied.)

To summarize, then, commonly employed calculations of the unit cost of undergraduate medical or dental education have such fundamental weaknesses as to be of little utility.

How can an educational unit cost be determined?

Implicitly at least, faculty effort reporting as used in the cost allocation studies is grounded in the belief that the problem at hand is one of "joint costs." A classic illustration is grand rounds, where a clinical faculty member may be rendering professional service, instructing house staff and senior medical students, and performing clinical research by monitoring the progress of certain patients involved in a research protocol.

According to the National Association of Accountants:

> Costs are joint when two or more distinguishably different products are produced together from a single input cost factor. The characteristic condition of a joint cost is that the cost of several different products is incurred as a lump sum for the combination and not separately for the individual products.[4]

"Simultaneous production" and "inseparability" are, therefore, two fundamental determinants of a joint cost activity.

Patient care, however, can be and in many general hospitals is carried on without a simultaneous education or research activity. Similarly, biomedical research can be, and is, performed in settings which lack concomitant activities in patient service and education.

Thus, despite the specific illustration of grand rounds, medical center activities in general do not appea to constitute "joint costs" as that term is defined in an accounting sense.

Conceptually, economics rather than cost accounting provides a starting point for analysis. To quote from a recent study of the University of Tennessee College of Medicine conducted by the Stanford Research Institute:

> it is highly unlikely that all, or even a major share, of research expenditures are actually necessary to the teaching function. But we are in no position to say what percentage of sponsored or departmental research is a necessary component of medical education.

* * * * * * * *

> Patient care is an output as far as the hospital is concerned, even though it is considered an input to medical education. Since most of the patient care would be rendered even if there were no undergraduate M.D. students using the clinical facilities as part of their educational program, it is very difficult to determine the incremental cost that should be apportioned to education, and it is the incremental cost that is relevant. What this means is that on the clinical side patient care is analogous to a joint product.[5]

SRI has made a value judgement regarding the necessary level of research, for example. Their critical finding, however, is that it is the incremental cost that is relevant.

In conclusion, the methodology for cost allocation in a university health science center should be grounded in the concept of incremental costs rather than joint costs. While seemingly a "technical distinction," such an approach, if accompanied by appropriate instructions, should simplify completion of effort reports by the faculty and help assure greater comparability of results among multiple institutions conducting cost allocation studies.

From the standpoint of the Federal Government, further perfection of the methodology and techniques of cost analysis is a major step in pursuit of an objective of adequate reimbursement for each health science center output--education, research, and/or patient service--which any given Federal program may be seeking to purchase.

Certainly, more work is required in this area to develop improved guidelines definitively to validate (or invalidate) effort reporting as a data gathering technique, test alternative forms of data gathering upgrade health science center accounting systems where necessary, and identify and quantify those inputs of research and patient service necessary for computation of a true "unit cost" for educating a medical student or any other category of student.

How extensive an "educational environment" is required for educating undergraduate medical (and dental) students?

"Educational environment" may be taken to mean the presence of house staff, graduate and postdoctoral students, etc., as well as biomedical research and patient service. It is the total setting within which the educational process is carried out.

The unrefined cost of the setting is reflected in the high unit cost of undergraduate medical education cited by the Association of American Medical Colleges, among others. Another manifestation is statements to the effect that medical and dental education are the highest cost elements within higher education.

While cost analysis within the parent university is at an even more rudimentary stage than the health science center-oriented cost allocation studies, there are fragmentary indications that, within certain institutions and on a unit cost basis, other graduate programs may approach or even exceed the unit cost of instructing a medical student.

Nor need the "setting" be beyond scrutiny as to its magnitude. It may be possible to reduce so-called "supporting programs" by changing the complex of such programs, the scope of each, or within the limits of quality demands, the character of each.

A prime illustration of this type of thinking are current efforts, such as those underway at the new University of Missouri-Kansas City Medical School, to fully utilize existing community resources rather than creating a new teaching hospital complex from the ground up, and to maintain an orientation toward biomedical research which determines the size of the research function in relation to the educational mission of the institution.

Indeed, the instructional function itself needs to be reexamined in terms of the breadth of professional competencies required by any single institution. With the advent of large-scale Federal research support has come a greater variety and larger number of faculty talents. Without diluting the quality of instruction offered, what can be done in the way of inter-institutional sharing of faculty resources, for example, which can lower both the cost of the educational setting and the unit cost of education?

This is but one of a series of issues which requires exploration in attempting to define the magnitude of the necessary "educational environment."

Program Budgeting by State Agencies

With the advent of Planning-Programming-Budgeting at the Federal level, State governments have shown an interest in adapting this management system to their own operations. Universities, and health science centers,are being affected in varying degrees.

The University of California, for example, has developed student-faculty ratios for each health science educational program. Selected illustrations from the 1970-71 Budget are as follows:

Schools of Medicine

M.D. Curriculum	3:1
Interns & residents	
Campus & County Hospitals	8.5:1
Other Affiliated Hospitals	15:1
Allied Health Programs	20:1

Schools of Dentistry

D.D.S. Curriculum	4:1
Graduate Professional, Interns & Dental Hygienists	8.5:1

A budget can be constructed using these ratios together with projected enrollments, estimated average salaries, and allowances for miscellaneous expenses.

The California ratios include some unidentified allowance for non-sponsored faculty research. The entire system, however, is geared to a determination of the level of State financial support for the health science programs. Hence no official recognition is given to income from Federal sources, voluntary health agencies, and private foundations which, in the research area, fund about 95% of the University's total effort.

Utilizing information developed in a cost allocation study, the University of Florida Medical Center is currently developing a program budgeting system with potential applicability to other health science centers.

Application of Systems Analysis to University Health Science Centers

--from a management standpoint, the cost allocation studies may be viewed as a "first generation" approach. Of greater complexity, and potential utility, are a number of activities now under way to describe the operations of health science centers in mathematical terms.

--research on computer-based mathematical simulation models for science center management began at the University of Toronto Faculty of Medicine. The basic input is detailed faculty activity reporting secured through a questionnaire or personal interviews. Over time, a series of models have been created designed to calculate, for example, staff teaching loads, patient exposure, and teaching space needed for undergraduate M.D. and other health science programs; the total resources, in terms of staff, space, operating costs, etc., required to carry out education, research, and service programs; and assessments of the likely funds available under existing or proposed fiscal and patient care policies.[6/]

--in addition to being "future-oriented" rather than reflecting "a slice-in-time," the simulation models have the obvious advantage of permitting decision-makers to rapidly obtain answers to many critical "what if" questions.

--in January 1971, the Duke University Medical Center began a long-term project to redesign the Toronto models and test their applicability in the assessment of alternative resource allocations. The University of Vermont College of Medicine has also indicated a desire to adapt some of the Toronto analytical methodology.

--again, recognizing their potential value, these efforts are fraught with difficulty in terms of the reliability of the basic faculty input data, the cost of implementation, and the need for "parallel runs" with more traditional decision-making processes.

--of perhaps greater short-range value, although this too requires further evaluation, are simpler studies such as that undertaken at the University of Iowa College of Medicine to analyze in depth the origin and interdependence of health science center operating costs.

--as indicated at an NIH-sponsored gathering of Federal representatives and outside experts held early in 1971, there is no evidence to date that a so-called "normative model" of medical educational institutions has yet been developed even in rudimentary form.

--Wing and Blumberg have sought to use multiple regression analysis as a tool for allocating 1964-65 aggregate medical school expenditures to the major educational programs.[7] The analysis, however employed data from financial reports which are of questionable reliability because of differing interpretations of the proper categorization of operating funds by individual medical schools. Moreover, as noted by Fein and Weber, while "the regression procedure is commonly used to estimate cost functions . . . there are a number of institutional problems which affect the applicability of the procedure for medical schools."[8]

--in summary, while there have been some promising initial attempts, the need for further research in the application of systems analysis techniques to health science center operations is obvious.

Footnotes

1/ William G. Anlyan, Vice President for Health Affairs of Duke University and Chairman of the Executive Council of the Association of American Medical Colleges, "Statement by the Association of American Medical Colleges on Extension of the Health Professions Educational Assistance Act," Presented before the Public Health and Environment Subcommittee of the House Interstate and Foreign Commerce Committee, April 21, 1971, pp. 19-20.

2/ American Dental Association, Annual Report on Dental Education 1969/70: Financial Information, A Report Prepared by the Council on Dental Education in Cooperation with the American Association of Dental Schools (Chicago: American Dental Association, 1970), p. 6.

3/ Augustus J. Carroll and Ward Darley, "Medical College Costs," Journal of Medical Education, 42 (January, 1967), 4.

4/ Costing Joint Products, National Association of Accountants Research Series No. 31, quoted in Robert I. Dickey (ed.), Accountants' Cost Handbook (2nd ed.; New York: Ronald Press Co., 1967), p. 13.3.

5/ Carl H. Rittenhouse and Samuel Weiner, A Study of the Semiannual Admissions System at the University of Tennessee College of Medicine (Menlo Park, Calif.: Stanford Research Institute, 1971), pp. 54-55.

6/ Richard Wilson, Director, Health Sciences Functional Planning Unit, University of Toronto, "The Application of Systems Analysis to Health Sciences Educational Planning," March, 1970, pp.2-3.

7/ Paul Wing and Mark S. Blumberg, "Operating Expenditures and Sponsored Research at U.S. Medical Schools: An Empirical Study of Cost Patterns," Journal of Human Resources, 6 (Winter, 1971), 75.

8/ Fein and Weber, 243.

Impact of Pending Legislation*

A. "The Social Security Amendments of 1971"

1) Payment for services of teaching physicians

In general, reimbursement for "teaching physician" services to nonprivate Medicare patients would be included under Part A, on an actual cost basis. Payment would also be provided on a cost-equivalent basis for the services of unpaid, voluntary faculty. This "cost-equivalent" would be based on the average salary (exclusive of fringe benefits) for all full-time physicians at the hospital or, if necessary, at like institutions in the area. These payments would be deposited in a fund designated by the organized medical staff and used for house staff stipends, to add or upgrade necessary facilities or services, support continuing education programs, or for similar educational or charitable purposes.

Fee-for-service charges would continue to be recognized under Part B for Medicare beneficiaries where a bona fide "private patient" relationship had been established or the hospital had, in the two-year period ending in 1967, and subsequently, customarily charged all patients and collected from at least 50% on a fee-for-service basis.

Finally, a hospital could include in its calculations for Part A reimbursement the actual reasonable costs which an affiliated medical school incurs in paying physicians to treat Medicare patients in the hospital. Only medical school costs which would be covered under Part A if provided by a hospital would be eligible for reimbursement on a reasonable cost basis.

The intent of the Ways and Means Committee is quite clear:

> in any borderline or questionable areas concerning whether reimbursement for the services of teaching physicians in a given institution or setting should be on a costs or charges basis, reimbursement would be on the basis of costs. 1/

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*With the exception of the Comprehensive Health Manpower Training Act of 1971, the other bills described in this section are still pending before the 92nd Congress. The effective dates shown as well as other provisions of the pending legislation are, therefore, still subject to change.

These provisions would become effective with respect to accounting periods beginning on or after July 1, 1971.

The impact of these changes are as follows:

--they will "greatly simplify the administration of the program by making it unnecessary to distinguish, as required by present law, between a physician's teaching activities and patient care activities in submitting and paying bills" 2/

--the present anomaly with regard to the lack of Part A reimbursement for services whose costs are borne by a medical school rather than its affiliated hospital will be eliminated, providing additional income to such schools

--while payment for services of volunteer faculty may already be used for educational purposes in some institutions, this will now become a mandatory requirement

--conversion from a charge to a cost-based method of reimbursement could well result in a net loss in income to those medical schools and affiliated hospitals with significant numbers of non-private patients, which have highly organized faculty group practices, centrally managed professional service plans, and reliance upon practice income as a major means of covering operational expenses

--without some operational experience, it is difficult to predict whether the pending changes will reduce or increase the flow of Medicare funds for physician services into health science centers in the aggregate

2) Experiments and demonstration projects in prospective reimbursement and incentives for economy

Effective upon enactment, this provision requires a report to the Congress no later than January 1, 1973, on the experiments and projects carried out together with recommendations as to program-wide implementation. Among the purposes for which the Secretary is authorized to engage in experiments:

to determine whether payments based on a single, combined rate of reimbursement for teaching activities and patient care rendered by residents, interns, and supervisory physicians connected with a graduate medical education program would result in more equitable and economical patient care arrangements. 3/

3) Other provisions not specifically related to university health science center components

While not singling out for special comment medical schools, teaching physicians, or teaching hospitals, a series of provisions in the Social Security Amendments are likely to affect the level of income generated from Medicare and, because of Medicare's importance as a standard for determining reimbursement policies, from other income sources as well.

Provision	Effective Date	Potential Effect on Income
a) Extending health insurance coverage to the disabled	July 1972	Plus
b) Incentives for comprehensive care under Medicaid	July 1971	Plus
c) Deductible and cost sharing under Medicaid	July 1972	Minus
d) Limit on costs recognized as reasonable	July 1972	Minus
e) Limits on prevailing charge levels	CY 1971	Minus
f) Reductions in optional care and services under Medicaid	Enactment	Minus
g) State determinations of reasonable hospital costs under Medicaid	July 1972 or earlier if a State desires	Minus

Of benefit in terms of potentially improving health science center-SSA relationships is a provision to create a provider reimbursement review board under Medicare.

B. "The National Health Insurance Partnership Act of 1971"

1) National health insurance standards

Requires employers to make available a basic health care plan for employees and their families with benefits including inpatient hospital services, physicians and other services, well-child care (to age 5), and annual eye examinations (to age 12). Provides for deductibles and co-insurance, except for well-child care.

Reimbursement for services will be subject to Medicare reasonable cost and reasonable charge limits

Effective as of July 1, 1973

2) Family health insurance plan

Provides health insurance to family members not eligible for coverage under the health insurance standards provisions or Medicare, where the annual family income is less than $5,000 for a family of four (and comparable amounts for families of other sizes) and family resources are less than $1,500. Benefits for a family member include up to 30 days of inpatient hospital care per calendar year; emergency and laboratory services; and eight physician visits per year, excluding visits for prenatal, postnatal and well-child care, or family planning services.

Provides for a system of premiums, deductibles and co-insurance with reimbursement again subject to the provisions of Medicare

Effective as of July 1, 1973

Based on the earlier references to losses in the teaching hospital as a concomitant of medical school financial distress, the health insurance standards and FHIP proposals have the potential to significantly improve the fiscal position of university health science centers.

C. "Comprehensive Health Manpower Training Act of 1971"

The Administration proposed a $6,000 per graduate capitation grant as the basic Federal support mechanism for medical, dental, and osteopathic education. As stated in the recent White Paper, "Towards a Comprehensive Health Policy for the 1970's," these funds plus funds for special project grants,

> and Federal funds for other purposes (participation in HMOs, in Regional Medical Programs, and so forth), should relieve most and possibly all of the schools' present financial distress. For a few schools, "emergency" grants may still have to be provided, but the goal is to eliminate "crisis" financing in the near future. 1/

The health manpower legislation initially approved by the House of Representatives contained a more generous capitation grant program, and special project grants for some eleven specified purposes (e.g., curriculum improvement, educational research, etc.) with authorization to use up to one-half of appropriated funds to assist health professions schools in financial distress.

The report of the House Committee on Interstate and Foreign Commerce remarked that:

> The capitation grants are designed to provide a dependable support base for the educational programs of the health professions schools without having to go through the "back door" of research to support education.
>
> * * * * *
>
> [Special project] grants would be used for operational costs required to maintain quality educational programs or to meet accreditation requirements.
>
> * * * * *
>
> The special project authority is designed to provide emergency financial assistance . . ., while identifying the factors that have led to . . . financial difficulties and determining the appropriate means for remedying them. 2/

As recommended by the Administration, the House bill specified that the Secretary may impose certain terms and conditions related to financial distress grants, including requirements that the school agree:

> (1) to disclose any financial information or data deemed by the Secretary to be necessary to determine the sources or causes of that school's financial distress, (2) to conduct a comprehensive cost analysis study in cooperation with the Secretary, and (3) to implement any operational and financial reforms recommended by the Secretary on the basis of information obtained in the course of the comprehensive cost analysis study or on the basis of other relevant information. 6/

In reporting out the "Health Professions Educational Assistance Amendments of 1971," the Senate Committee on Labor and Public Welfare outlined the following philosophy with regard to operational support of health professions schools:

> The covert support of educational programs through the research grant mechanism is not in the public interest and it is an inadequate mechanism for that purpose.
>
> * * * * *
>
> The bill therefore entitles each educational institution to an award intended to cover approximately one-third of the average per student educational costs incurred nationally by such institutions if the institution makes a reasonable effort to respond to the national need by increasing enrollments, reducing the time period required for the completion of study and making other efforts to increase the supply of health services personnel and by improving and expanding educational programs.
>
> To the extent essential for the education of the students the Committee understands that the costs of research and the costs of patient care are integral to per student costs of the institution. And that they shall be included in the calculation of costs for the purposes of applying for their entitlement grant. 7/

As proposed by the Committee and approved by the Senate, a multitiered capitation formula was approved authorizing higher amounts than contained in the Administration or House versions of the legislation.

A separate authorization, beginning at $50 million in fiscal 1972 and declining by $10 million annually to a total of $10 million in fiscal 1976, was included for relief of health professions schools in financial distress. These project grants were to assist any school which is in serious financial straits to meet its costs of operation or to meet accreditation requirements. The terms and conditions of award paralleled those contained in the Administration and House bills.

The Senate bill also provided for a study of the cost of educating students of the various health professions. As noted by the Labor and Public Welfare Committee:

> in view of the Congressional desire to provide reasonable and realistic support to these institutions for the education of health professions students including to the extent determined essential to the educational program the costs of biomedical research and patient care the Committee has, therefore, directed a special study . . . to determine by January 1, 1973, the average per student cost of education in the various health professions, and to describe uniform standards for defining and reporting such costs in the future.
>
> The Committee feels that the National Academy of Sciences and within it the newly created Institute of Medicine has the breadth of . . . expertise plus the respected independent status required to . . . undertake such a study. 8/

In another new departure, the Senate authorized capitation grants for the support of graduate medical and dental education in the belief that "a portion of the costs of these programs should be born (sic) nationally, rather than by the people who use the hospital--or the benefactors of the medical school." Annual awards were to be made to medical, dental, and osteopathic medicine schools as well as non-affiliated hospitals for the support of <u>educational</u> costs of graduate training programs.

> Schools or hospitals with approved applications would be entitled to receive $3,000 for each full-time intern or resident in primary health care, or any other shortage area designated by the Secretary, and $1,500 for each physician or dentist in any other graduate training program.
>
> Grants would be phased, so that in the first year of the program (fiscal year 1973), only physicians and dentists in first year graduate programs would be counted, . . .

Among other conditions incident to a grant award, the Secretary of HEW was "to define those items included in educational costs (but these shall not include costs relating primarily to patient care)."9/

The Committee of Conference adopted the Senate provision that capitation grants be used for the support of education programs, but deleted language declaring the intent of Congress that these grants provide approximately one-third of the national average of education costs. The capitation program approved in Conference is closer in amounts authorized to the House than the Senate bill.

While approving special project grants and contracts, the conferees specifically repealed authority allowing these funds to be used for projects of schools in financial distress. Support for these institutions is limited, as proposed by the Senate, to a separate authorization identified as "Grants for schools in financial distress." The conference substitute authorizes appropriations of $20 million in fiscal 1972, $15 million in fiscal 1973, and $10 million in fiscal 1974 for such grants. These funds are to assist any health professions school "which is in serious financial straits to meet its cost of operation or which has special need for financial assistance to meet accreditation requirements." 10/ The terms and conditions of award follow the earlier House and Senate bills, but with an added proviso that the recipient school must maintain its level of effort in expenditure of non-Federal funds. The Secretary of HEW may waive this latter requirement in certain circumstances.

The Committee of Conference retained the Senate provision for a study of costs of educating students of the various health professions with the following comment:

> The conference substitute requires studies to determine the national average per student cost of health professions and nursing schools to provide training for the first professional degree. Reports shall be submitted describing such costs, defining national uniform standards for determining such costs in future years and describing the costs of implementing such standards in the health professions schools and recommending how the Federal Government can most equitably make capitation awards to schools based on these costs. The conferees intend that Congress shall as promptly and fully as practicable consider the implementation of the interim and final reports /to be submitted no later than March 30, 1973 and January 1, 1974, respectively/. 11/

The conferees adopted the provision of the Senate bill with respect to grants for the support of graduate training programs in primary health care and other shortage areas (to be designated by the Secretary of HEW), but deleted the proposed inclusion of training programs in other medical specialties. The Committee emphasized its intent that "recipients of grants under this section apply such funds to cost items that are primarily related to education, and not to subsidize patient care, and the Secretary is expected to adopt appropriate application procedures to insure that funds granted for this purpose are not diverted." 12/

Potential Changes in Blue Cross Reimbursement Policies

--in early February of 1971, the Insurance Commissioner, Commonwealth of Pennsylvania, directed a series of questions to the five Blue Cross plans in the Commonwealth involving, in part, the methods and nature of hospital reimbursement utilized by the plans.

--included for analysis and further consideration were such questions as: Should there be a limit on the number of residents and interns per patient for which the hospital can be reimbursed? Should approved educational activities be reimbursable?

--in its formal response of mid-March 1971, Blue Cross of Greater Philadelphia concluded that to contain the cost of hospital care "the financing of medical education as a tax on the community's hospital bill must be re-examined." This particular Blue Cross plan went on to recommend:

> immediate study, either by the Legislature or the existing State Board of Medical Education and Licensure, or both, to promulgate standards for the number of interns and residents, if any, that consumers of health care should reasonably be expected to support as a cost of patient care. Such standards of necessity must be accompanied by appropriate regulations which would exclude from hospital care and patient charges any expense directly or indirectly related to any interns or residents in excess of the approved complement.
>
> * * * * *
>
> [Research] projects which are intertwined with patient care are included in the consumer cost rather than being charged back to the sponsors of the research. We recommend that appropriate regulations be developed establishing standards for the control of this expense.
>
> Pending community decisions on this issue, we are prepared to press the hospitals for standards designed to control the costs our subscribers pay which are associated with medical education. 10/

--by the latter part of June 1971, Blue Cross of Greater Philadelphia had, in effect, moved away from the concept of a numerical limitation on house staff and was engaged in negotiations with Philadelphia area hospitals looking toward some other form of constraint on dollar cost.

--Nationally, over 50% of Blue Cross plans currently recognize house staff educational costs in their reimbursement policies. While unresolved at this writing, the issue in Pennsylvania has received a good deal of publicity. The Blue Cross Association has not taken a formal position in this instance, but a number of the constituent Blue Cross plans are reportedly rethinking the terms of their reimbursement contracts in the area of graduate (i.e., intern and resident) medical education.

Footnotes

1/ U.S., Congress, House, Committee on Ways and Means, Social Security Amendments of 1971, 92nd Cong., 1st Sess., 1971, H. Rept. 92-231 to accompany H.R. 1, p. 97.

2/ Ibid.

3/ Ibid., 306.

4/ U.S., Department of Health, Education, and Welfare, Towards a Comprehensive Health Policy for the 1970's: A White Paper (Washington: U.S. Government Printing Office, 1971), p. 42.

5/ U.S., Congress, House, Committee on Interstate and Foreign Commerce, Comprehensive Health Manpower Training Act of 1971, 92nd Cong., 1st Sess., 1971, H. Rept. 92-258 to accompany H.R. 8629, pp. 28-32.

6/ Ibid., 79.

7/ U.S., Congress, Senate, Committee on Labor and Public Welfare, Health Professions Educational Assistance Amendments of 1971, 92nd Cong., 1st Sess., 1971, S. Rept. 92-251 to accompany S. 934, p. 16.

8/ Ibid., 25.

9/ Ibid., 29-30.

10/ U.S., Congress, Conference Report, Comprehensive Health Manpower Training Act of 1971, 92nd Cong., 1st Sess., 1971, H. Rept. 92-578 to accompany H.R. 8629, p. 17.

11/ Ibid., 61

12/ Ibid., 58-59.

13/ Bruce Taylor, Executive Vice President, Blue Cross of Greater Philadelphia, Statement before the Pennsylvania Insurance Department public hearing, March 17, 1971, p. 9.

As mentioned at the outset, the foregoing analyses and discussion have raised a host of questions requiring further investigation. For example:

--if the comparative tuition figures displayed earlier are substantiated by additional study, should there be a closer link-up between the true educational expense of training an undergraduate medical student and the tuition and fees charged for such training? What are the pros and cons of such a proposal and its impact for Federal policy?

--To what extent, if any, should Federal support policies for medical and dental schools be brought more closely into line with assistance to higher education institutions in general?

--What higher costs are being incurred, in terms of scholarship aid and remedial education, for example, in connection with the recruitment of minority students? What are the ramifications of these costs in terms of the desirability of substantially increasing minority student enrollment?

Again, these matters are merely indicative, rather than an exhaustive listing. Perhaps equally important is the need to pursue more sophisticated analyses than has been possible heretofore. To cite one illustration--the application of some form of multi-varite approach in addition to examining the impact of various factors on medical and dental school financial distress on a one-to-one basis.

Based on the work completed thus far, however, a number of conclusions and attendant recommendations can be postulated.

1. Too little effort has been devoted to analyzing the aggregate effects upon health science centers of a wide range of relevant Federal programs, many of which are administered by the Department of Health, Education, and Welfare. This deficiency has resulted in inadequate attention to the coordination of Federal efforts, both within HEW and Government-wide.

   Responsibility for overall direction of coordination activities should reside in the Assistant Secretary of HEW for Health and Scientific Affairs, with steps taken to (a) secure appropriate intra-departmental policy clearance of proposed administrative issuances affecting health science centers, (b) encourage rotational assignments for key personnel responsible for formulation of such policies, and (c) create a data base for continuing analysis building on the current information system operated by the National Institutes of Health.

2. While there are encouraging signs for the future, stewardship of the financial distress awards program as it has operated heretofore has been inadequate. If NIH's Bureau of Health Manpower Education is to continue to carry the major responsibility for evaluating the existence of financial distress in these very complex institutions, its strengths will have to be significantly broadened and improved.

The grants review and management process of the Bureau should be bolstered by such actions as recruitment of high-caliber personnel for day-to-day liaison with a specific group of health science centers on a geographic assignment basis; development and maintenance of a reference file for the universe of health science centers encompassing medical school-teaching hospital arrangements for payment of faculty salaries, provisions of professional service plans, comparative tuition charges, nature and magnitude of State assistance, etc.; heavier concentration on analysis and summarization of grant requests as a means of facilitating the operation and maximizing the value of external advisory groups; and, careful reexamination of the structure and composition of the advisory apparatus, recognizing the new authorizing legislation and the rather unique characteristics of the financial distress awards program.

3. With few exceptions, the actions undertaken by health science center management in response to financial difficulties have tended to be of the "belt-tightening" variety. Despite the high operational costs of medical and dental educational institutions, by and large there has not been rigorous exploration of the underlying causes of financial problems, reordering of priorities, or formulation of clear-cut plans for achieving financial stability.

HEW should create a financial management consulting capability and foster continued development of management tools (e.g., cost analysis studies and mathematical simulation models) which can assist both health science centers and the Department in describing and dealing with institutional financial problems. As a source of technical advice and expertise, an interdisciplinary team of analysts should be established in the Office of the Assistant Secretary, Comptroller to assist universities, other parts of the Secretary's office, the NIH, and the Office of Education. This staff would work to further the most appropriate allocation of operational costs including clarification and refinement of the cost allocation study methodology, encouragement of tests to determine the reliability of effort reporting, conduct of two or three in-depth studies at institutions which have previously employed the cost allocation management technique, and extension of the cost analysis approach to other health professions and allied health schools as well as other parts of the university.

A greater degree of management consciousness also needs to be encouraged within the university health science center environment. This could entail, in part, (a) higher Federal support within the context of the special project grant program for recruitment and retention of top-level management staff and/or installation of improved management information systems, and (b) discussions with official accreditation bodies in the medical and dental areas to foster greater attention to the adequacy of management systems in the institutional accreditation process.

4. Recognizing the hazards inherent in generalizing from a group of eleven centers which are, in fact, comparatively weak in such areas as extent of research involvement, the financial difficulties of health science centers appear to be concentrated in the "educational environment" rather than in instructional activities per se.

Through continuing analysis of financial distress grant awards and application of management tools such as the cost allocation studies, further investigation should be undertaken to test this conclusion.

5. Better health science center management, by itself, cannot entirely relieve existing financial difficulties. There is a need for additional and stable operational support for medical and dental education. Moreover, in all likelihood and despite a substantially increased level of basic support from the Federal Government, some institutions will require further assistance in the form of special project grants.

Stable operational support has recently been assured through congressional enactment of a capitation-based support mechanism for medical and dental education. Special project grant authority for financial distress awards has also been continued, but with terms and conditions for award which aim in the direction of remedying the underlying deficiencies in a finite time period. As quickly as warranted by staff capability, these requirements should be administratively extended beyond circumstances of financial distress to all activities eligible for support on a project grant basis under the health manpower training legislative authorities.

6. A variety of factors--pending Social Security legislation with a potential to reduce health science center income, a lag period between the effective date of these changes and implementation of the Administration's proposed health insurance legislation, possible tightening of Blue Cross reimbursement for the costs of graduate medical education, and continuing reorientation of NIH research support from more general to relatively targeted activities--will generate additional pressure to recoup deficits incurred in the "educational environment" beyond those "necessary" for training medical (dental) students through the rubric of "costs of undergraduate medical (and dental) education." Health science centers have a variety of other students such as interns, residents, postdoctoral, nursing and allied health students, who share the use of the educational environment with medical and dental students. Total fiscal stability of the centers will be dependent upon adequate support for these educational programs as well.

Future utilization of Bureau of Health Manpower Education special project grant funds to defray extensive deficits in research, patient service, and other educational programs should reflect conscious and openly acknowledged policy decisions. There should be no dilution of the program's primary intent through repetition of that form of decision making which was once called the "charade in which educational support must be disguised in project-research terms."1/

7. Probably the single most important factor in achieving long-run financial stability for health science center operations will be the development of adequate sources and mechanisms of reimbursement for patient service activities.

There is a need to closely monitor the operational impact of changes in the pending Social Security legislation as well as possible major revisions in the reimbursement policies of Blue Cross and other insurance organizations which could have an adverse impact on educational programs. The likely new authority for Medicare reimbursement on a team basis should also be adequately tested.

To deal with the long-term financial needs of health science centers, however, Congress should enact the Administration's health insurance standards and family health insurance proposals.

The final two findings and recommendations are of special pertinence, for they go to the very heart of the problem. Indeed, they serve to reemphasize that adequate reimbursement based on sound cost analysis for each major health science center output--education, research, and patient service--should be the cardinal principle of public and private reimbursement policies.

Footnote

1/ George E. Miller, "The Institute Discussion: Students and Curriculum," in Julius H. Comroe, Jr. (ed.), "Report of the Ninth Teaching Institute: Research and Medical Education," Journal of Medical Education, 37 (December, 1962), 94.